Veterinary Medicine

VOL. XIX FEBRUARY, 1924 No. 2

Developments in Veterinary Parasitology, During the Past Fifteen Years

By Maurice C. Hall, Associate Editor

(Continued from the January issue)

LIFE HISTORIES

Much important work has been done in the field of life histories, and only a small amount of this work can be reviewed here.

Arthropods

Ox warble (Hypoderma spp.). The life history of the ox warble as outlined by Curtice predicated the ingestion of the eggs of the warble fly by the cow after licking them from the hairs to which they were attached, the migration of the warbles to the gullet, and their subsequent passage to the region under the skin of the back. This theory was opposed, as regards the ingestion of the eggs, by various workers, notably Carpenter in Ireland, and during the last few years it has been established, largely by Carpenter and by Hadwen in Canada, that the eggs hatch on the hairs, and that the young larvae enter the skin at the root of the hair and make their way to the back, the customary route, apparently, being through the subcutaneous tissues and by way of the loose connective tissue of the gullet.

The man-infesting bot (Dermatobia cyaniventris (D. hominis). This parasitic maggot lives in tropical America and attacks a wide range of hosts, including man and various domesticated animals. In 1910 Morales stated that the fly oviposits on the body of a mosquito, and later states that in 1912 Nunez Tovar had observed mosquitoes carrying such eggs and by causing them to bite animals had obtained tumors containing Dermatobia larvae from which he had reared the adult fly. Blanchard had observed such eggs on mosquitoes from Central America as early as 1900. Subsequently Gonzalez Rincones has collected mosquitoes, Janthinosoma lutzii, with these eggs attached and Surcouf has obtained from these eggs Dermatobia larvae. Knab reports the collection by Urich of Janthinosoma with these eggs attached. Apparently the eggs hatch on the body of the host at the time the host is attacked by the mosquito and the young larvae enter the skin. It is of interest to note that the natives in parts of tropical America have long looked on the mosquito as in some way related to Dermatobia and that they call the latter the mosquito worm.

Bots (Gastrophilus spp.). In connection with the subject of parasitic dipterous larvae it is of interest to note that we do not know some details of the life history of the common horse bots. Some writers have thought that the young larvae escaped from the egg and gained the mouth and nose; others that they are ingested by horses in licking themselves; Cholodkovsky surmised that the larvae hatched out and penetrated the skin of the horse, causing an itching which led the horse to root out these larvae with his teeth and swallow them; Portchinsky concurred for the most part with Cholodkovsky, but thought that the larvae which entered the skin perished, sacrificing themselves, but causing the horse to lick off and swallow larvae which were not so embedded; Roubaud thinks that horses do not lick themselves but do bite themselves and that they ingest the eggs in this way. With all of this theory, we have only a small addition to our positive knowledge and that is the observation of Roubaud that the eggs hatch on being tapped or jarred and that bot larvae brought in contact with the buccal mucosa of the guinea pig promptly enter the mucosa and lie there in a superficial position. This observation, published over 6 years ago, has apparently not been followed up and there is evidently a good chance for the next 15 years to see some interesting facts added to our knowledge of this life history.

Flukes

The sheep liver fluke (Fasciola hepatica). The thesis proposed by Leuckart in 1879 and by Thomas in 1883, that young liver flukes enter the gall duct from the intestine, was generally concurred in by subsequent writers for many years. In 1914 Ssinitzin reported experiments showing that the young larvae burrowed through the intestinal wall, entered the body cavity, wandered about for a time, and finally entered the liver through the capsule of Glisson. In the meantime various writers had suggested that the flukes might enter the liver by way of the blood stream, and recently Compes, with the three theories before him, has concluded from a histological study of infested livers that the invasion is by way of the blood stream. As he did not work with experimentally infested animals to ensure a study of the very earliest migration and invasion stages his work is not as complete as Ssinitzin's and does not appear to outweigh the latter's work. As matters stand, the theory of invasion by the gall duct may be regarded as incorrect, with the evidence as to invasion through the body cavity challenged and the theory as to invasion by the blood stream standing with inadequate evidence at present.

In this connection we may note that the life history of the large American liver fluke, Fascioloides magna, still remains unstudied and that there is here an interesting problem for the American veterinary parasitologist.

Additional mollusc hosts have been reported for F. hepatica in the past 15 years and the mollusc hosts of a number of fluke parasites of domesticated animals have been reported, including those for F. gigantica, Dicrocoelium dendriticum (D. lanceolatum), Paramphistomum cervi, P. explanatum, Gastrodiscus aegyptiacus, and various blood flukes.

Busk's fluke (Fasciolopsis buski), Nakagawa finds the life history of F. buski to be similar in a general way to that of the common sheep liver fluke.

Blood flukes. The life history of blood flukes belonging to the genus Schistosoma was unknown until recent years and many conflicting theories were developed in regard to it. Katsurada and Hashegawa showed that infection with Schistosoma japonicum occurred by w. y of the skin. Subsequently Miyairi and Suzuki in 1913 showed that the intermediate host of that fluke was a snail and Leiper found the same to be true of the Egyptian vesical blood fluke, S. haematobium. The discoveries of these facts have led to extensive investigations in fluke life histories and have been of major importance in developing control measures for eradicating schistosomiasis. They have incidentally settled a moot question in establishing the specific identity of S. mansoni and showing that it is not merely a variant of S. haematobium with lateral-spined eggs.

The lung fluke (Paragonimus westermani). The life history of this fluke has been discovered of late years by Nakagawa, Yokogawa, Kobayashi, Yoshida and other workers, and shows certain interesting differences from that of the blood flukes. Apparently the miricidia hatching from the fluke eggs attack certain snails and develop to cercariae. These cercariae become encysted in or on the tissues of certain crustaceans, especially fresh-water crabs. These encysted cercariae are infective for suitable host animals that swallow them. Apparently some, at least, of the cysts break off and float about in water, thus giving rise to a water-borne infection. The young flukes appear to penetrate the intestinal wall, enter the body cavity and make their way to the diaphragm, penetrate the diaphragm, and enter the lungs on reaching the thoracic cavity.

The Oriental liver fluke (Clonorchis sinensis). The life history of this fluke as ascertained by Kobayaski, Nakagawa, Muto, Mukoyama and other Japanese workers, presents another variation in the way of intermediate hosts. Like P. westermani, this fluke has two hosts, the first being a snail, but the second being a fish of various possible species. The encysted larva in the fish is infective for suitable primary hosts. Similar life histories have been ascertained for related flukes by Ciurea.

Holostomes. Up to very recently the holostomes or hemistomes have been classified as metastatic trematodes and defined as a group without intermediate generations produced by asexual reproduction, i. e., without sporocyst development or development of a number of cercariae in a redia. The investigations of Lutz and of Ruszkowsky indicate that sporocyst development occurs in snails, giving rise ultimately to fork-tailed cercariae. These cercariae attack fish, giving rise to tetracotyle larvae. According to some writers, mammals, birds, amphibians, fish, molluscs and annelids may act as intermediate hosts. Among the hemistomes from domesticated animals may be mentioned Alaria alata from the dog and Strigea gracilis from the duck.

Tapeworms

The broad fish tapeworm (Diphyllobothrium latum). The discovery of the complete life history of this tapeworm is a most striking contribution to our knowledge of tapeworm life histories. It had long been known that the larva, or plerocercoid, lived in the muscles of fish, but all attempts to infect fish with the eggs of the tapeworm had failed. Janicki and Rosen have shown that after the eggs of the tapeworm hatch in water the ciliated embryos are ingested by small copepods, Cyclops strenuus or Diaptomus gracilis, developing in these crustaceans to a procercoid. When such infested copepods are ingested by suitable fish, the procercoids develop to plerocercoids in the fish and when such fish are ingested by suitable primary hosts, such as man or dog, the plerocercoids develop to adult strobilate tapeworms. This is the first intimation we have had that a tapeworm might require two successive intermediate hosts and is a fact of great interest and importance.

Manson's bothriocephalid (Diphyllobothrium mansoni). Following the work of Janicki and Rosen, Japanese workers, notably Yoshida and Okumura, have ascertained the life history of a related worm which has long been known in its final larval stage as Sparganum mansoni. These larvae have been found in such a wide range of hosts as man, swine, chickens, snakes and frogs. When the larvae are fed to dogs they develop to a tapeworm so similar to D. latum that at present the only known diagnostic feature is the egg, which is relatively and actually narrower. The ciliated larvae ("Coracidia" of Rosen) from these eggs are swallowed by a copepod, Cyclops leuckartii, in which they develop to procercoids, and when these copepods are swallowed in water containing them, the procercoids develop to plerocercoids in the various intermediate hosts noted above.

The sheep measles tapeworm (Taenia ovis). The cysticercus found in many parts of the world in the muscles of sheep had been regarded for many years as Cysticercus cellulosae, the armed bladderworm of swine musculature, occurring in an unusual host, but a very thorough investigation of this parasite by Ransom has shown that the adult tapeworm is not T. solium of man, but a previously unrecognized tapeworm of the dog. Ransom developed the adult tapeworm in the dog by feeding the cysticercus and Sondhi has subsequently reported this tapeworm from the dog in India in natural infestation. This information as to the correct life history points to a sound prophylaxis, where the previous mistaken idea pointed to useless and misdirected measures.

The goat coenurus (Multiceps gaigeri). In 1907 Gaiger reported a coenurus from the goat in India, the parasite occurring in the central nervous system, as does the gid parasite, but also in the liver, lungs, spleen, kidney, bladder, intermuscular connective tissue, subcutaneous connective tissue and subperitoneal connective tissue, a range of tissues more extensive than that reported for the rabbit coenurus. However, its occurrence in the connective tissue led Gaiger to identify it with the rabbit coenurus, Multiceps serialis. Gaiger developed the adult tapeworm in the dog by feeding the larvae. A study of Gaiger's material by Hall showed that the parasite was a new species and it was named Multiceps gaigeri. The parasite is of importance in meat inspection in India and Ceylon. Sondhi has found the adult tapeworm in natural infestation in the dog in India.

The common double-pored tapeworm (Dipylidium caninum). It has been known for years that the larvae of this tapeworm occurred in dog fleas and lice. Investigations of late years by Joyeux and by Lopez Neyra and Munoz Medina have shown that while adult lice may ingest the eggs of this tapeworm in feeding on the contaminated skin of a dog, adult fleas are incapable of ingesting the eggs and that fleas become infested as larvae. They also find that the tapeworm larva in the flea does not become an infective cryptocystis until the flea becomes an adult.

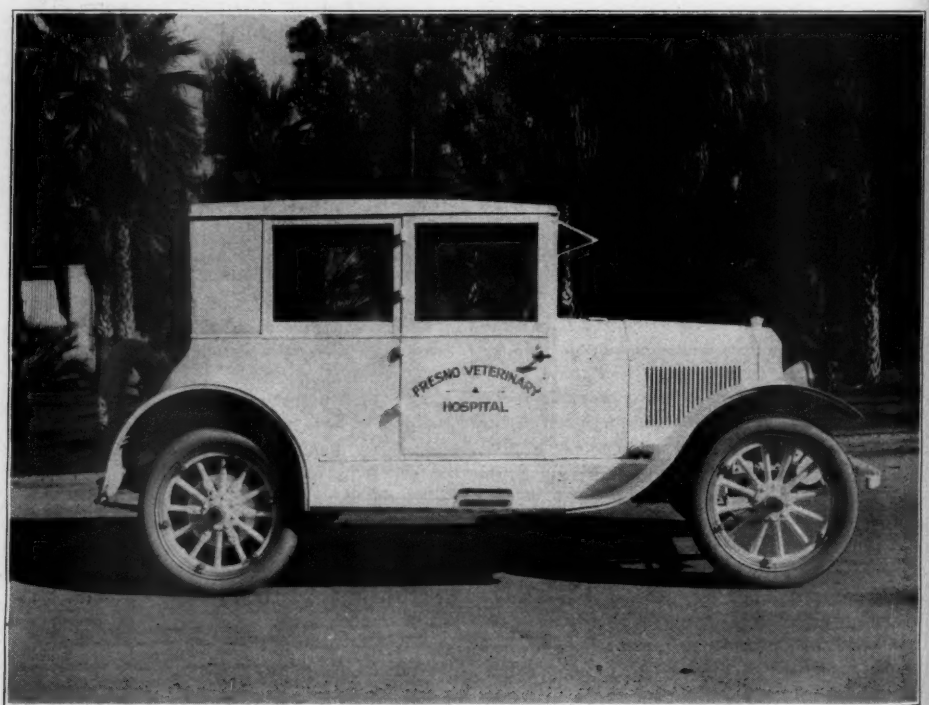
Chyzer's double-pored tapeworm (Dipylidium chyzeri). Our knowledge of the life history of D. caninum shows the larvae of other species of Dipylidium may occur in arthropods, though it has long been known that larvae apparently belonging to D. echinorhyuchoides occurred in snakes. The life history of D. chyzeri, recently reported by Lopez Neyra and Munoz Medina and by Parrot and Joyeux, shows that in this case the eggs of the adult tapeworm in the domestic cat and other felidae develop in larvae in a lizard, the gecko, and these larvae when eaten by cats develop to adult tapeworms.

Trinchese's double-pored tapeworm (Dipylidium trinchesei). In the case of this tapeworm the larvae occur in snakes and other reptiles, but Joyeux has failed to infect reptiles by feeding the eggs of the tapeworm to them and surmises that there may be an earlier intermediate

host, such as an insect. The adult tapeworm has been found in the cat, but this may not be the customary normal host.

Bird tapeworms. Since the researches of Rossiter, Schmidt, Mrazek, Moniez, Hamann, Linstow and others, showing the development of the larvae of tapeworms, especially of the genus hymenolepsis, in entomostracans and the development of the corresponding adults in water fowl, additional work has been done and new entomostracan hosts found. However, Joyeux has found a departure from entomostracans as intermediate hosts in the case of Hymenolepis parvula of the duck, the larva of this tapeworm developing in suitable leeches. In the case of species of hymenolopis devoloping in land birds, the intermediate host may be a beetle, as Joyeux reports for H. serpentulus, or stable flies, as Guberlet reports for H. carioca. Choanotaenia infundibulum develops in the house fly, according to Guberlet, Solowiew, and Grassi and Rovelli, or in a beetle, Geotrupes sylvaticus, according to Joyeux. Davainea proglottina develops in slugs, according to Grassi and Rovelli, and Chandler, though Meggitt and also Joyeux have been unable to confirm this. Raillietina tetragona (Davainea tetragona) develops in snails, according to Piana, or in house flies, according to Ackert. Schistocephalus solidus of the duck and various other hosts was shown by Abildgaard many years ago to develop from larvae occurring in fish; Nybelin has recently shown that embryos from the eggs of the tapeworm first infect copepods, Cyclops serrulatus and C. bicuspidatus, developing to a procercoid, and that fish become infested by eating the infested copepods.

Anoplocephaline tapeworms. The life history of the unarmed tapeworm occurring in horses, cattle, sheep, etc., is not yet solved, but many workers are investigating this problem and a solution of it seems to be reasonably likely within the next few years.



Essex Coach converted into small animal ambulance at Fresno Veterinary Hospital, Drs. McKenna and Wintringham, Fresno, Cal. The rear seat has been taken out and a platform built within the body as a bed for a dog. The front seat on the right drops down and forward, giving room when door is open to carry a dog into the ambulance.

A Veterinarian on a Western Tour

By E. T. Baker, Moscow, Idaho, Associate Editor

The 1924 meeting of the A. V. M. A. will be held in Des Moines and many veterinarians from the west will doubtless combine attendance at this meeting with an automobile tour. If some of those practicing in that restricted portion of our country that lies east of the Mississippi River will likewise journey to the Des Moines meeting by automobile and will extend their tour a thousand or fifteen hundred miles to the westward of Des Moines they may enjoy at first-hand "Seeing America." All the more necessary now that Emerson Hough can no longer supply it second-hand in highly palatable doses.

I can not offer a better excuse for discussing summer touring at this season than the fact that many of us are thinking of it and perhaps also as the poet has said:

"Summer skies and sunshine never seem one-half so fair

As when winter's snowy pinions shake the white down in the air."

"Out West," we think nothing of thousand-mile auto trips; just last fall, the writer, with three congenial spirits (human, of course) drove 1080 miles to see a football game. We left Moscow Thursday afternoon and arrived at Eugene, Oregon, Saturday forenoon, traveling 540 miles, of which 280 miles are paved, and the rest a smooth gravel or macadam road. Leaving immediately after the game, we drove to Portland that evening (128 miles). Getting up before breakfast we left the thriving metropolis of Oregon at 5 a. m. Sunday morning, and landed at Moscow that evening at 10 p. m., having traveled 412 miles that day, with three stops for meals and one to make a few remarks to a punctured tire. Except for starting we never had to change gears. We crossed two ferries and several hundred miles of sagebrush desert. We had one detour of three miles to make, which is now completed. At no time did we speed, but just kept up a steady gait of 30 miles an hour and enjoyed the scenery all the way. Had we cared to, we could have driven to the California line in less than eight hours, on a paved highway all the way. Our hotel bills were a dollar a night, and our meals cost from 40 to 75 cents each. Gasoline was 22 cents; oil 30 cents a quart; repairing tire four-bits, and storage per night the same. Everywhere along the route we met courteous and reasonable garage men. Our expenses were less than twenty dollars each for the thousand mile journey, and, due to the courtesy of the Oregon officials, we were given the best seats in the grandstand.

Western Herefords

This personal experience is given because it shows in a graphic manner what touring in the Far West is like. If you are "skeered" of our roads and mountains and swift running rivers, forget it. All you have to have in order to tour this part of the country is a car that will run and enough funds to allow you to enjoy the scenery as you go. Of course, one can travel as cheap as the old fellow who came out

from St. Paul on a transcontinental train, but it isn't conducive to the highest enjoyment of the trip. He sat up all night and saved the

Wheat Eight Feet Tall in Idaho
The man is Doctor Baker

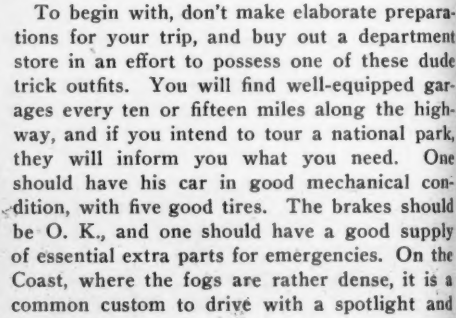
cost of a berth, and then slept all day to save the price of meals!

First of all comes the personality of the tourists themselves. One couple, in an old battered Chinese Packard, with very little money, may have a whale of a good time. Another couple, fault-finding, overbearing, and supercilious, traveling in a Marmon sedan, with nothing but twenty-dollar bills to break, may have a very unpleasant trip. To these people, the hotels are "beastly;" the garage men are "bandits"; the country is "rotten"; and everything in general is "the bunk." You know the type; fortunately, there are few of this kind in our profession.

If one can possibly do it, small children are better left at home or farmed out. This applies to long trips in particular. The kids become tired; changes of water and food cause all kinds of stomach and bowel troubles, and they soon take the joy out of life for every one near them. This fall we observed a Dodge car of about the vintage of 1913 loaded with eight children and one goat crated on the right running board. The kids all had the snuffles or pip; the wife looked worn out, while the husband and supposed father had the air of an ex-bartender attending a W. C. T. U. convention. A spare tire was dangling from the radiator cap; a huge pile of bedding was parked everywhere a child was not, and the rear springs looked all tuckered out. The tires were old; the jack would not work, when we stopped to give this happy caravan a little help. The most cheerful member of the entire group seemed to be the goat; the party looked like an old-time Oklahoma sooner "jest movin' around."

To begin with, don't make elaborate preparations for your trip, and buy out a department store in an effort to possess one of these dude trick outfits. You will find well-equipped garages every ten or fifteen miles along the highway, and if you intend to tour a national park, they will inform you what you need. One should have his car in good mechanical condition, with five good tires. The brakes should be O. K., and one should have a good supply of essential extra parts for emergencies. On the Coast, where the fogs are rather dense, it is a common custom to drive with a spotlight and the dimmers on.

The camping outfits are usually too bunglesome, and it takes too much time to arrange and there is no time left for scenery. The main thing to remember is: Bring along plenty of good, woolen clothes and blankets, even if the Mississippi valley is a hundred in the shade



Western Range Sheep on way to Market

when you leave; when you reach the mountains along about sundown you will think it is Christmas.

Clothes are important, and it makes us laugh to see some of the eastern outfits. School

ma'ams in particular, seem to thrive on trick outfits of the Bill Hart type. Take a large, well-fed looking woman, weighing about 198 pounds and garb her in a pair of knickers that were intended to be fashioned into a wagon cover or a tarpaulin for an elephant, and she really attracts attention wherever she goes. Then add a jockey cap, a red bandanna, high heeled oxfords and silk hosiery, and our eastern tourist is ready for the wild and woolly western mosquitoes.

A man can wear any old thing, and get away with it, although he takes chances if he appears in a golf suit.

Another thing is the route itself. The customary trip is made the northern route and the return by the southern. Out here, May is a little early; June is our 'high water" month for then the rivers are the highest, and July and August are very hot and dry. In addition to this, we have frequent "dust storms" that will be a surprise to the visitor. The clouds suddenly become black enough to make Kansans look around for the nearest cyclone cellar. A fine mist of dust begins to settle over things, and once in a while a rain or hail storm is mixed up with it. September and October are two of our finest months. The fall rains have settled the dust, and it is a pleasure to travel then. Of course, the national parks are closed, and, in early seasons, one may get caught in a blizzard up in the mountains. The Coast is very delightful in July and August, and while hot and muggy on some days, the nights are very cool and refreshing.

We have some typhoid fever out here, and as in traveling anywhere else one should take the typho-bacterin, if one is not already an immune. "Spotted fever" is prevalent in parts of the West, but so rare as to be almost out of the question for tourists. The water may be soft, hard or very alkaline.

Tourists camps are very plentiful; almost every town has one. Hotels are numerous, and very reasonable in price. Personally, the writer has had his fill of "roughing it, and while a few days of camping out along some lake or up in the mountains is interesting, it soon grows old, and a good comfortable bed in a hotel appeals to him. One will have no trouble finding the route, and, along the way, he will be put next to all the scenic points of interest by fellow tourists and garage men. Local veterinarians are always glad to meet with travelers of their own profession, and will give them many useful pointers.

To summarize a trip out west the writer would suggest that you prepare yourself just

Winter Scene in Mountains of the West

about as complete as for a hundred-mile Sunday journey at home, and then purchase the things required along the route as you need them.

Some investigators are inclined to the belief that black tongue in dogs is similar if not identical to pellagra in the human. Some cases of black tongue that have been observed have occurred immediately following a period of restricted diet and especially when the dog has been subjected to excessive exercise. The disease is not infectious or transmissible. In other words the symptoms and characterization of this disease is apparently analogous to pellagra.

Proper care and feeding of the young sire is of more importance than for an individual dam because the sire is expected to weigh about fifty per cent more at maturity than the dam and the sire has a greater influence on a breeding herd than any one dam.

The County Veterinarian*

By J. H. Krichel, Alexis, Illinois

IN our fight against tuberculosis it has become the policy of the U. S. bureau of animal industry to attempt eradication of this disease through the area test using the county as a unit. Of course this necessitates procuring of funds with which to finance the project. The bureau representative usually cooperates with a committee of the local farm bureau in securing an appropriation from the county board of supervisors. The amount usually required and appropriated being in the neighborhood of four or five thousand dollars, which sum is to be expended in the employment of a county veterinarian and incidental expenses. The cooperation of bureau representative and farm bureau agent in procuring county funds allows the latter a very good chance of adding to his glory, by assuming that the farm bureau is responsible for the tuberculin test of the county, when in reality it was originated by the veterinary profession fostered by our various veterinary organizations. The county test is conducted by a member of our profession of whom we hear very little, and last but not least it is financed by the Tax Payers of the county in which eradication is taking place.

"Non-Resident" Ruling Opposed

The employment of a veterinarian to test the herds of a county is a problem which now confronts the bureau and county representatives, there being a ruling of the bureau of animal industry that the county veterinarian must be an "accredited veterinarian," one who has passed the required examination prescribed by the bureau, and a non-resident of the county. The non-resident requirement is one that is causing no little discussion among the members of the profession, especially those engaged in general practice in the counties that are affected. Many contend that the local practitioner who can spare all his time and services to the cause is the man who should be given consideration, while others feel that the bureau is right in using the method now employed.

Reflects Upon the Reliability of the Veterinarian

However this may be it seems quite evident that the impression is too often left by the present method of selecting county veterinarians in that the local veterinarian is or may be inclined to be unreliable and incompetent to conduct such tests. There seems to be a discredit cast upon the veterinary profession of the county and that their veterinarians therein are not to be trusted in conducting tuberculin tests among their clients. This condition should not be allowed to exist and I feel would not exist if there was a little more cooperation between the bureau of animal industry and the practitioner in general. Certainly it seems too bad to think that a profession can not work in unison and accomplish a great work in tuberculosis eradication, under the name and head of the veterinary profession, thereby not only advancing the interests of the profession in general, but also assisting in placing our profession on a higher plane with other learned professions.

Bureau Defends Its Position

We have the information from the bureau that a resident veterinarian where employed to do testing in area work has always caused trouble in some way or other and therefore hampered the work of eradication. The bureau insists that in choosing a non-resident veterinarian, it eliminates any trouble between practitioners within a county where there are several applicants for the position; it will not allow one veterinarian to encroach upon his fellow practitioner while testing cattle within his territory, also keeps veterinary work other than testing in the hands of the practitioner and thus does not cause the embarrassing position of the county veterinarian having to refuse calls from his former clients. The bureau feels that in choosing a non-resident veterinarian better service is rendered in eradication work and that the best interests of the veterinarian, producer, consumer and breeder are served.

Affects Practitioner's Income

As regards to the effect of county or area testing upon the income of the local practitioner, much depends upon the type of practice he has. In hog districts the loss may be small, while in dairy districts it may amount to a significant sum and may mean the difference between a loss and a profit in the year's business. In questioning several practitioners of reputation and experience, I find that in their particular cases the effect of tuberculosis eradi-

* Read at Illinois meeting, Chicago, December, 1923.

cation by the area plan is somewhat of a blow to their income. In former days they usually employed assistants and maintained up-to-date office equipment down town, while now through the advent of farmer vaccination they have discharged their assistants and since the advent of area testing have moved their offices to their residences and there getting what business may come their way and curtailing expenses as much as possible in order to make a living. Others are engaging in side lines, as the yield from practice alone is insufficient to make it a paying proposition. The condition has much to do in the discouragment of the high school graduate entering our veterinary colleges and therefore contributes to the dearth of veterinary students. Do not misunderstand me as meaning that this loss in practice is alone due to the area test, as it is not, but is due to a combination of factors and one of which is the area test.

Discrimination Seems Unjust

Many veterinarians and live stock producers feel there is too much discrimination between the federal veterinarian and the local accredited practitioner. If an owner chooses to have his cattle tested by his local veterinarian, in whom he has explicit confidence and who can do it at a time convenient to him, he must not only pay for the test which he is quite willing to do, but all reactors are branded and disposed of according to their value as meat for human consumption and the owner receives no indemnity, again it does not help him toward placing his herd on the accredited list. This condition seems a bit unfair not only to the veterinarian but to the producer as well. It is hard for the practitioner to see why animals condemned by him should not be compensated for by the federal and state government, it is hard for him to understand why federal and state medicine as you may term it should come into his territory and rob him of some of his profitable practice. He realizes that he was capable of handling such diseases and outbreaks, as foot and mouth disease, hog cholera, anthrax, contagious pleuro-pneumonia, test cattle for interstate shipment and a thousand and one other tasks with which he comes in daily contact, three hundred and sixty-five days of the year, but he is not quite capable of the task of testing cattle for tuberculosis under the same conditions as the county veterinarian or bureau representative We wonder why.

Local Veterinarian Often Consulted

The question is often asked the local practitioner "What do you think of the county test, is it safe, and do you think it on the square?" Of course there is only one answer any sound minded veterinarian with any degree of principle can give, and that is go to it, sign up as soon as possible, it doesn't cost you anything extra as the tax payers are paying for it, the ten cents per hundred for hogs, indemnification of reactors all of which the local man can not do, altho he realizes it means the loss of several hundred dollars per year to his own practice.

Recommend the Work

The majority of veterinarians recommend the county test cheerfully and assist in any way they can to make the procuring of applications easier, expecting to profit through the advertisement the profession will receive, and the hope that some day the herds will be turned over to him to keep clean However the herds will be maintained tuberculosis free after the county veterinarian cleans them up, we do not know, we have been promised that it shall be the work of the local practitioner, but now we hear whisperings among some farm bureau members who feel that it will not be done in this manner, but that a county veterinarian may become a permanent position and forever remove the work of tuberculosis testing along with other veterinary work from the realm of practice, so far as the local practitioner is concerned.

"Watchful Waiting" Advised

Let conditions be as they may, let us as veterinarians remember the bureau has promised the local veterinarian the task of keeping the herds clean, after eradication has been completed by a bureau representative. May we as practitioners in the field do our part to encourage the work of eradication and may we give our county veterinarians every cooperation possible in the completion of this work, and after this work is finished, and we have kept our faith in the promise of the bureau, then we shall see if the program of turning over the herds to the local practitioner will finally compensate us for our faith and trust in the bureau.

Position Not An Easy One

As regards the position of county veterinarian much can be said for and much more against the popularity and financial compensation of the position, as compared to the character of service rendered. The task requires no small degree of patience, hard work and earnest endeavor. In order to successfully test all the herds of a county one must be busy every day except Sunday, travel rain or shine, through mud and snow, and through the farm-

ers busy season not only act as veterinarian, but drive up, catch and secure the animals to be tested as well. Some farmers feel the veterinarian is paid by the county and may just as well earn his money, some feel it is free and therefore do not attach any great amount of importance to the test and think the veterinarian can do all the work if he wishes to test the herd.

Receives Less Pay Than County Agent

Again the veterinarian accepting the position of county veterinarian being a non-resident of the county in which eradication is taking place must give up practice to accept the appointment, must move his family to his new field of endeavor, furnish his own instruments, ear tags, car, plus up-keep, and other incidental expenses, all for the fabulous salary of from three thousand to thirty-five hundred dollars a year. While the county agent receives an annual salary of from four thousand to six thousand dollars, plus all expenses including car and office, stenographer and assistant county agent. Therefore, you see the salary of the county veterinarian is hardly in keeping with the service he is expected to render and the short duration of his contract as compared to that of the county agent. The county veterinarian must be conscientious for on his judgment depends the keeping or condemning of animals which may or may not be affected with tuberculosis, he not only safeguards the welfare of the herd tested, but also a greater service in protecting the health of the children partaking of the milk from the herd. The increased price of hogs paid by the packers being ten cents per hundred is estimated in one county to net the farmers thirty thousand dollars per year after eradication, this was advertised along with the information that this was only another achievement of the local farm bureau while the veterinarian was hardly mentioned and the profession completely ignored. Does this look as if we were advertising our profession through our works. Looks somewhat doubtful, does it not.

Employed By the People, Not By the Farm Bureau

The county veterinarian may be the means of doing the profession much good, and he should remember that he represents all the citizens of a county, not only members of the county farm bureau, he must realize that he is one of the most important and trusted county officers and should dignify his position by proper conduct, and in this way reflect credit to his profession. Again his position affords a golden opportunity of rendering a lasting service to the veterinary profession and live stock industry, by breaking down the effect of false propaganda against the veterinarian in general, and to assist in reestablishing public confidence in the profession. He may also be instrumental in ironing out little misunderstandings between a local practitioner and a dissatisfied client. No doubt he is often asked his opinion on veterinary matters pertaining to other than tuberculin testing, here he can be of service to the profession by tactfully recommending the services of the neighboring practitioner. The county veterinarian should adhere closely to the work of eradication and leave other work strictly in charge of the practitioner. I am very proud to say that from all reports most of our county veterinarians are men who are a credit to the profession and men who really wish to render the profession a service. However we have rumors of some weak-kneed individuals who may be taking advantage of the trust placed in them and are catering to the advice of the county agent and others who may lead them from the straight and narrow path and cause the practitioners of those counties no little worry. To such as these may I give this bit of advice, attend strictly to your own business, endeavor to render your profession and live stock industry a service, don't think that you will be any the more popular with the live stock interests for violating your duty to the profession, and remember that the practitioner was there long before you came to eradicate tuberculosis and in all probability will be there long after you are gone Therefore do not violate the trust and confidence placed in you, not only by the profession, but by the live stock interests as well.

The Question of Hemorrhagic Septicemia Vaccination

In speaking of federal and county medicine there looms upon the horizon another suspicious project, namely hemorrhagic septicemia vaccination of feeder cattle at certain stock yards. As rumored and stated in the various journals and farm papers, this work to be under the supervision of the bureau of animal industry and to cost about ten cents per head per 5 cu. cm. dose. The new undertaking to be an experiment to find out the value of vaccination for hemorrhagic septicemia which often develops in feeder cattle. The experiment to consist of a single 5 cu. cm. injection, while most authorities recommend the use of at least two doses at five-day intervals. Have not the

practitioners of this state as well as of other states used this bacterin for about ten years with generally good results? The only trouble with the proposition was that when a practitioner endeavored to read a paper covering such work, he was laughed at and sat upon by the various laboratory and experiment station experts as having "some imagination" and that salt water would do just as much good. However in spite of all this unfavorable criticism we have continued to use it in the field and many of us feel that we can place almost as much faith in hemorrhagic septicemia bacterin or vaccine in checking outbreaks of this disease, as we can on serum and virus in the control of hog cholera in affected herds. Let this be as it may, what about the single injection to produce immunity when we recognize that bacterin or vaccine therapy should consist of repeated and increased doses. Again how is the practitioner to compete with ten cents per dose for 5 cu. cm., when he has to pay 25 cents for the dose from his supply house. Here again we are getting into deep water, even if the bureau has the best intentions and no doubt but what they have, it will cause the practitioner to lose some business and probably much dissension between live stock owner and the veterinarian as regards to costs of vaccination against this disease. This is only one small item but multiply them and where does the practitioner come in? Are we working to the best interests of all concerned?

Profession Confronted With A Problem

It seems to be quite a problem with which we as a profession are confronted. We must appreciate the good the bureau has done the profession and live stock industry through the production of antihog-cholera serum and virus, altho there should be a law regulating virus control, in tick eradication, and again in tuberculosis eradication. But fellow members I wonder if the ball started rolling with the best intentions, namely the employment of county veterinarians, the experimenting of hemorrhagic septicemia vaccination at the small cost of ten cents per dose, will not in the long run prove a menace instead of a blessing to the veterinary profession and live stock industry in general.

As it is generally conceded that the live stock industry is protected and made safe and profitable by the veterinary profession, the live stock industry is dependent upon us and vice versa. One can not profitably exist without the other.

Is it not a fact that the enrollment in our various veterinary colleges is on a sharp decline? There must be a reason, and of course there is. There is not sufficient compensation in the service of the bureau of animal industry, in the various state, county, and municipal positions, and last but not least in the field of practice there has been a sharp decline in the income of the general practitioner, and really we as a profession are assisting in that decline. Would it not be well for us to remedy this condition in every way possible and probably make our profession more attractive, along with the professions. which attract thousands of students each year?

It seems to me and no doubt to many of you here today, that if we wish to exist as a profession we must get busy and develop co-operation among the various branches of the profession, namely the veterinarians of the bureau of animal industry, of the various state and city officials and those in general practice. In so doing we will erase any stigma of incompetency which may have been placed upon the profession. We will make the field of veterinary science a profitable one for all branches of the profession, we will place our profession on a higher plane with other professions, fill the vacant desks in the veterinary colleges, and stimulate public interest in our work.

The use of dairy products is steadily increasing in the United States about one-fifth of the money expended for foods is spent for dairy products. The average annual consumption of whole milk is almost 50 gallons for each man, woman and child.

President Coolidge's Saddle Horse

Interesting Tour With Agricultural Students

By G. A. Roberts, Escola Agricola, Lavras, Minas, Brazil.

It recently fell to the lot of the writer to accompany our senior class in agriculture on a two weeks' tour of inspection of some public institutions, mostly of an agricultural nature, in the states of Minas, Rio de Janeiro and São Paulo, Brazil. For the good of the cause of agriculture in the country the federal minister of agriculture granted railroad passes to our graduating class, accompanied by an instructor, hence these remarks.

Principal Veterinary School near Rio de Janeiro

Summer begins in dead earnest in this country in December, therefore school closed for three months' "ferias" the last of November.

On December first we went to Barbacena Minas, and there visited three institutions. First, the Posto Zootechnico (Animal Husbandry Station). The animals kept here are largely for breeding purposes to be used by farmers of the community. The animals consisted of several Spanish Jacks, Simenthal and Guernsey bulls, Duroc and Poland China boars.

The second place visited was the Experiment Station of Sericicultura (silk culture). It was most interesting indeed to note the various transition stages from the laying of the eggs by the "silk worm" moths through the development of the larvae feeding upon cut mulberry leaves to the cocoon. Then the spinning and weaving of the walls of the cocoon into cloth.

The third place visited was the Apprendizado (apprentice school in elementary agriculture and mechanics) for young boys from twelve to sixteen years of age. It is intended primarily for poor boys but when vacancies occur they may be occupied by others. It has accommodations for 150 boys and there is always a long wating list. The classrooms, laboratories, and shops were well equipped and the farm well kept. The latter presented a most attractive sight, planted to fruits, vegetables, cereals, grasses, etc.

From Barbacena we went to Nictheroy, the capital of the state of Rio de Janeiro, but not the Federal capital which is the city of Rio de Janeiro, lying just across the bay from Nictheroy, a twenty minutes' ride by ferry boat. In Nictheroy we visited the Superior School of Agriculture and Veterinary Medicine. The equipment for the basic subjects in both agriculture and veterinary medicine, such as botany, bacteriology, zoology, chemistry, etc., was quite elaborate but in the more specialized subjects the equipment was limited.

This is one of the few schools in Brazil giving a veterinary course and granting a degree in veterinary medicine. It is the principal school of veterinary medicine in the country. It has two veterinarians on its faculty. The students of the past year were divided as fol-

B. A. I. Experimental Post at Rio

lows: First year 19, second year 14, third year 3, fourth year 5. The subjects taught were as follows: First year, climatology, inorganic chemistry, botany, general zoology.

Second year, histology, physiology, organic chemistry, anatomy, agricultural zoology.

Civil Service Examiners in Veterinary Medicine. (Reading from left) Dr. Octavio Dupont, Dr. P. Pereiros Horta, Dr. Armando Alves da Rocha, Dr. Marques Lisboa, Dr. A. Charles Conreur.

Third year, general pathology, pathological anatomy, microbiology and parasitology, animal husbandry, clinics.

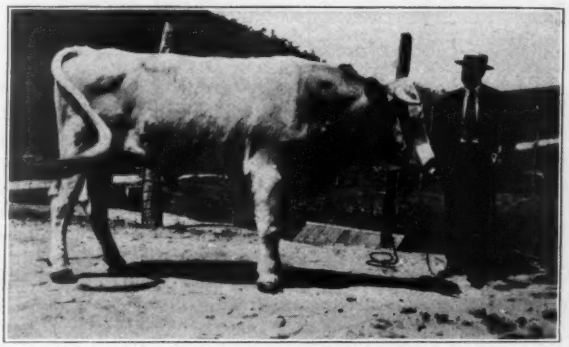
Fourth year, animal husbandry, hygiene and sanitation, therapeutics, clinics, surgery and obstetrics, meat and milk inspection.

Other schools granting veterinary degrees are located in Pernambuco (Olinda), a Catholic School, Rio Grande do Sul, and São Paulo. As far as the writer's information goes each school has one veterinarian on its faculty. On the São Paulo school faculty are five physicians, including the director. The first two schools have been in operation some ten or twelve years, the others two and four years respectively. The São Paulo school has accepted no new students for the past two years and it remains to be seen what the new governor will do toward continuing the schools.

From Nictheroy we crossed to the city of Rio and first visited the Federal Industria Pastoril (Bureau of Animal Industry). The principal divisions of the Bureau are animal husbandry, infectious diseases, meat inspection, milk inspection, public sale yard inspection, quarantine and experimental divisions. The powers that be place little confidence in the executive ability of the veterinarian, even those graduated from Cornell and European schools, hence the chiefs of the divisions are usually M.D.'s. Nearly all the veterinarians in the country are Europeans; Italians, French, Belgians, Swiss and a few from Germany and other countries. As far as our information goes there is not a single practicing veterinarian in the whole of Brazil but many official veterinarians are doing some private practice and business seems to be picking up some.

At the Industria Pastoril we were considerably interested in a "concurso" (civil service examination) for veterinarians. The examination was conducted by the five men shown in the accompanying picture: Dr. Armando Alves da Rocha, M. D., Director of the Industria Pastoril; Dr. Pereiras Horta, M. D., Bacteriologist; Dr. Marques Lisboa, M. D., Director of Veterinary Experimental Station of the state of Minas; Dr. Octavio Dupont of the Veterinary school, Nictheroy; Dr. A. Charles Conreur, Veterinarian Industria Pastoril. Those taking the examination were veterinary graduates of the Olinda and Nictheroy schools, physicians and some with veterinary or medical training.

The examination was divided into three main divisions. The first was eliminative, consisting of oral questions in anatomy and histology. The answers were demonstrated on the carcass of a cow provided for the purpose and with prepared histological slides. The second part was written and consisted in describing in detail one of the two or three named



Simenthal Bull at Barbacena

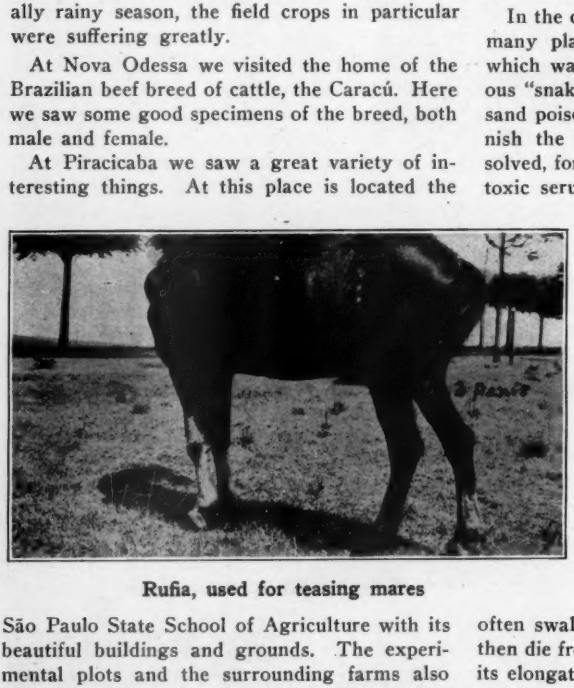
infectious diseases. The third was practical and concerned diagnosis and treatment. Cattle were used upon which to demonstrate the answers.

There were many other places of interest visited in Rio, such as the National Museum, the Zoological and Botanical Gardens.

From Rio we went to Campinas in the state of São Paulo, where we visited the Instituto Agronomico (Agricultural Experiment Station). The work here consists to a large extent of variety tests with fruits and cereals from many countries and in the originations of new varieties. Owing to a long drought, during the usually rainy season, the field crops in particular were suffering greatly.

At Nova Odessa we visited the home of the Brazilian beef breed of cattle, the Caracú. Here we saw some good specimens of the breed, both male and female.

At Piracicaba we saw a great variety of interesting things. At this place is located the São Paulo State School of Agriculture with its beautiful buildings and grounds. The experimental plots and the surrounding farms also presented a most pleasing sight. This is the school whose first president was Prof. D. C. Smith of Michigan. Between Campinas and Piracicaba, at Villa Americana, the first Southerners from the United States immigrated after the Civil War, selecting some of the most beautiful and best farming land in Brazil.



Rufia, used for teasing mares

The Piracicaba school is excellently equipped, both in its laboratories and in farming implements. It has practically all the machinery such as is found at the larger agricultural colleges in the States. A well equipped dairy and a fairly large dairy herd are maintained. The cattle consist of the breeds of Holstein, Guernsey and Limousine. Several stallions and jacks were also to be seen.

One rather unusual sight was that of a "rufião," as illustrated by the accompanying photo. This is produced as a custom more or less common in Europe. A scrub stallion is operated upon by making an incision over the couse of the penis behind the scrotum. The penis is then grasped and after severing its sheath attachment is pulled through the incised opening and left exposed hanging behind the scrotum. The animal cannot copulate hence is used as a "teaser" to determine when a mare is in heat.

In the city of São Paulo, as in Rio, there were many places of interest to be seen but that which was most attractive was the world famous "snake farm." Here from one to two thousand poisonous snakes are kept on hand to furnish the venom, after being dried and redissolved, for injecting into horses to produce antitoxic serum against the effects of snake bites. There are some three or four classes of poisonous snakes, including rattlesnakes, but the great majority belong to the class "Lachesis," which includes a dozen or more rather common varieties, but not found in the United States. Death sometimes occurs within twenty to thirty minutes after the bite of these snakes.

For curiosity several varieties of non-poisonous snakes are also kept on hand to show visitors. Many are interesting in form and color markings but the interesting feature of the mussurana is that it feeds upon poisonous snakes. It will often swallow a snake almost as large as itself then die from suffocation through pressure upon its elongated lungs in its body cavity.

At this juncture the students left for their various homes and the writer and Mrs. Roberts are spending the Christmas holidays with numerous friends in and about São Paulo.

The use of milking machines when properly operated does not diminish the quantity of milk providing the cows are hand stripped. The quality of milk is changed very little when the last milk is obtained by hand.

Dr. Fred Goodall, Gilmore City, Iowa, recently delivered four fully-matured calves from a cow. All however, were non-viable.

President's Address Before the Missouri Valley Association

By H. B. Treman, Rockwell City, Ia.

THERE is no doubt that the veterinarian is at the present passing through a critical period, and to many it is a very discouraging one. It is true that there is in every trade or profession times of depression and reverses that seem to come and go like waves and I believe as a rule they add strength and resourcefulness to the members of whatever calling they affect; so let us not be pessimistic, but hope that there will be some good come out of the present situation.

It seems that the veterinary profession is being harassed by some opposition from without its ranks, probably much of it is through misunderstandings and some of it from indiscretion of some of its members. There is no doubt that this is the case in the unpleasant situation that exists between the farm bureau and the veterinarian in some districts. It is very much to be regretted that there cannot be more harmony in their work because one cannot exist to very good advantage without the other. Surely with all the diseases, parasites, bacteria and general ailments that the domestic animal is heir to in these days there could not be much profit to the farmer if there were no veterinarians to help cope with them.

I think the more broad minded members of the farm bureau are beginning to see and have in fact always seen the advantage of having a well trained veterinarian within call and have appreciated him.

Deplores Two-day Curriculum

It is those who because of a little training in veterinary science think themselves capable of giving expert advice on all questions pertaining to stock raising. I know of no place where the old saying "that a little learning is a dangerous thing" is more applicable. The farmer who has attended the farmer-vaccination school for from six to nine hours, takes his examination, during which he has the opportunity of consulting his notes of the previous day, and passes with flying colors is the man who thinks he knows all about hog cholera, can make a correct diagnosis upon postmortem examination of the first subject and tries to tell his neighbor more about hog diseases than you or I or even his instructor ever heard of. The farmers who are broad enough and have training enough to make them really capable of treating the minor ailments and vaccinating their own hogs are the first to appreciate the value of special training, and are the first to employ the really capable veterinarian.

Some of the above mentioned circumstances are very annoying to say the least but we have the satisfaction of knowing that if given enough rope they will hang themselves and sooner or later will be glad to call in the veterinarian when they get into trouble.

Chastises Traitor Within Ranks

There is another form of opposition that the veterinarian is meeting lately that is not merely annoying and more or less injurious to his income but makes his very blood boil with a righteous indignation and that is the low-down, contemptible traitor within our own ranks. I can show compassion toward the farmer who vaccinates his own hogs and to the vendor of worthless stock remedies or even to the offending county agent, because many of them are honest and conscientious to the extent of their mental capacity and training, but for the individual who is called a man and who has received the title of Doctor of Veterinary Medicine and then turns traitor to his fellows for the sake of a few dollars is the more contemptible.

I am not referring altogether to the flagrant violator of the ordinary rules of ethics but also to the man who cuts prices and will knock and slash his competitor at every opportunity, I only wish that some of them were here so I could throw it into their teeth. We don't have such a chance very often, that kind of practitioners don't attend such meetings very often, but I want to say just this much for the benefit of any one who might be tempted to underbid or in any other way try to belittle his neighboring practitioner. Don't do it. Don't belittle yourself by trying to belittle your colleague. Please note that I said colleague and not competitor. I wish we could forget the word competitor and the spirit of competition except in the sense that each and every one of us should strive to do our work and make our service just a little better than that of others. I could go on at some length about the mistakes of practitioners and others but I can see no good

to come from it. It is easy to criticise and find fault; it is easy to see that the average patient is sick, but it is another proposition to make a correct diagnosis and outline a successful treatment in all cases.

I indeed wish I could do the latter in some of the conditions we have been coming in contact with lately. All I will try to do will be to outline a few ideas I have and you can take them for what they are worth as of course you will do any way if you have the patience to listen.

Lying Down on the Job

First I believe too many of us are sort of lying down on the job "waiting for something to turn up" hoping that the veterinary organizations will succeed in bringing about such favorable legislation that sooner or later farmer vaccination will be legislated out of business, the quacks will all be dead and all these knockers and price cutters will be made to toe the mark and everything will be smooth sailing so that all we will have to do will be to make our calls, do as little as possible and prosper. But I want to say that while organization is all right and working for favorable legislation is all right and should be carried on that is not enough by any means and will not accomplish very much if we as individuals fail to do and to be all that we should. The unit of any organization is the individual and if the individual is not right the organization will not be right. It is up to each one of us to work out our own problems in our own territories to the very best of our ability and they must be worked out on a just and equitable basis toward all concerned if we are to stand.

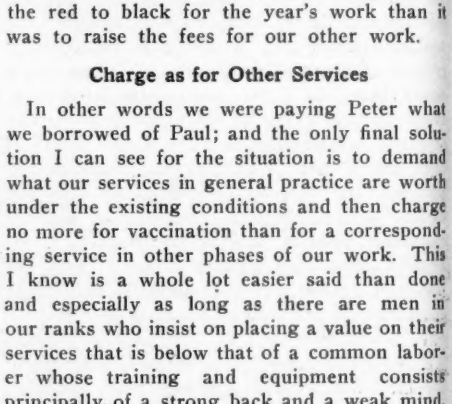
So far as farmer vaccination is concerned I think it is folly to think of trying to legislate it out of existence. There is no question that the idea was in the beginning forced upon the farmers' organizations as a matter of protection against the profiteering of a few members of our profession. They were guilty and the rest of us have had to suffer for their sins. In order to gain their point in the legislature, the farmers' representatives magnified the conditions to the extent that public sentiment demanded relief from an imaginary wrong and through force of numbers got what they thot they wanted. It is up to us to show in a much slower and less popular way that we are not selfish and that we are more capable of vaccinating hogs than they are.

If the veterinary profession is worth while, if we as a profession are worthy of existing then we are entitled to a just compensation for our professional services, whether it is for vaccinating hogs or the performance of a delicate operation on a valuable animal, and gentlemen it seems to me that right here we have practically all been more or less at fault. With all the increased demands for special equipment and higher standards of education and preparation, we have allowed our schedule of fees to remain very much the same as they were years before these changes took place and when hog vaccination became so popular and almost universal it was much easier to make the charges sufficient to change our balance from the red to black for the year's work than it was to raise the fees for our other work.

Charge as for Other Services

In other words we were paying Peter what we borrowed of Paul; and the only final solution I can see for the situation is to demand what our services in general practice are worth under the existing conditions and then charge no more for vaccination than for a corresponding service in other phases of our work. This I know is a whole lot easier said than done and especially as long as there are men in our ranks who insist on placing a value on their services that is below that of a common laborer whose training and equipment consists principally of a strong back and a weak mind.

Possibly some of my remarks have sounded somewhat pessimistic but that is not my feeling. I believe these annoying conditions can and will be ironed out successfully, but it must come through co-operation and not through destructive competition and dissension.



A typical case of fistula, photographed by Dr. B. T. Hopkins, Lake Worth, Florida.

History of Veterinary Education in the Province of Quebec

By Dr. M. C. Baker, Montreal, Quebec

VETERINARY education in the Province of Quebec, Canada, owes more than can be told to the enthusiasm and energy of Duncan McEachran, F.R.C.V.S., Edinburgh, D.V.S., L.L.D., McGill, who came to Montreal in 1865 having been induced to come from Woodstock by the late John Shedden. He had been associated with the late Professor Andrew Smith in the Ontario Veterinary College and as soon as he was settled in Montreal (he, a young man in his early twenties) determined to open a Veterinary School in Montreal. He was enabled to do this through the kind assistance of Dr. Geo. W. Campbell, dean of the medical faculty of McGill University, Sir Wm. Dawson, principal of the university, Major Campbell of St. Hilaire, Que., president of the Provincial Council of Agriculture, through whose efforts a small grant of $800.00 per year was received from the Provincial government. With this material and moral support and the hearty cooperation of the members of the medical faculty of the university, the Montreal Veterinary College was established in 1866, affiliated with McGill University, and in 1889 became the faculty of comparative medicine and veterinary science of McGill university.

The Montreal veterinary college from the first exacted a matriculation or entrance examination and a course of study extending over three six-month's sessions. It is not too much to say for the principal of the veterinary college that he was the first teacher of veterinary science on this continent to adopt the three years course of study. It required no small amount of courage and enthusiasm for a young man, just starting in practice, with no private resources other than those derived from the practice of his profession, with only the small grant of $800. to start a college demanding an entrance examination and a longer course than was considered necessary in any other institution of the kind on this continent. Principal McEachran had high ideals of what the veterinary profession should be. He aimed not at the turning out of horse doctors but educated scientific veterinary surgeons capable of taking their rightful place among the members of other learned professions. He was ably succeeded in his efforts by many notable members of the medical faculty of McGill. Sir Wm. Osler during all the time he was at McGill took a very warm interest in veterinary education. The veterinary students took lectures in botany, physiology, chemistry, pathology and histology with the medical students. The means at the disposal of the principal made any other arrangement impossible.

During the first few years of the existence of the Montreal veterinary college all teaching except that taken at the university was given by Doctor McEachran alone. He was the only veterinary teacher. In 1875 the veterinary college moved into new and commodious quarters on Union Avenue, where the government grant was increased to $1,800. conditional that the students from the Province of Quebec be admitted free. Gradually as it was found possible the staff was increased leaving to the principal still the lion's share of the teaching under the title of theory and practice of veterinary medicine and surgery, but lessening to some extent his work among the medical men who materially aided by their work in teaching as well as by their hearty sympathy in the work. Principal Sir Wm. Dawson of the university taught botany and was always a warm friend of the college. He was succeeded by Prof. D. B. Penhallow in the same subject. Sir William Osler, the foremost physician of his day, professor of physiology, and those who were fortunate enough to have taken his lectures can remember to this day his clear concise expositions of this important subject, as well as his friendly interest in the veterinary students. His successor, Dr. T. Wesley Mills, who was so interested in veterinary medicine that he looked upon his degree of D.V.S. with equal pride to his M.D. His specialty outside of his regular course in physiology was comparative psychology, and he also gave a course in canine diseases. Dr. M. C. Baker taught an atomy; Dr. James Stewart, Dr. James Bell, Dr. N. Gunn and Dr. A. D. Blackader taught successively materia medica to the veterinary

students, and Dr. Chas. McEachran taught contagious diseases and Dr. Craig and Dr. Girdwood, chemistry. Dr. George Wilkins, histology, Dr. Wyatt Johnson and Dr. C. F. Martin, pathology.

A long step it was felt was taken forward when in 1889 the Montreal veterinary college became a faculty of the university, thus enabling the graduates to have a university degree of Doctor of veterinary science instead of the certificate of proficiency given hitherto by the veterinary college. All the old graduates of the college were given the opportunity of taking the D.V.S. degree—nearly all of them availing themselves of the privilege; only a very few neglected to do so and they have lived to regret that they did not accept the degree when it was offered them.

The hopes that becoming a faculty of the university would materially aid the veterinary colleges were not fully realized. The university seemed unable to do more than to give the prestige of its name to the cause of veterinary education. More laboratory equipment, increased staff of teachers, better facilities for clinical teaching became necessary if the faculty of comparative medicine was to improve or even to retain its former position among veterinary schools and colleges, when a private school under Principal McEachran —neither the government nor the university could or would assist in providing these. Dean McEachran decided in 1902 to step down and out rather than to struggle on under such a heavy handicap. He has today the proud satisfaction of seeing the principles of veterinary education that he worked for for so many years practically unsupported by his confreres universally adopted and the ideals he worked for in process of realization.

There were four great pioneers in veterinary education on this continent—Law, Liautard, McEachran and Smith. McEachran has survived them all, and today, though over eighty and broken in health, his interest in veterinary education is as keen as ever and he has reason to feel that the work he did as principal of the Montreal veterinary college and dean of the faculty of comparative medicine in McGill university has borne good fruit, and I feel sure that he is pleased to see the veterinary colleges of today are going far ahead of what he, with the limited means at his disposal, was able to accomplish.

In 1876 or 77 instruction was given in French at the Montreal veterinary college. Drs. Bruneau and Couture lectured on the veterinary or final subjects, the students taking physiology, chemistry and botany with the medical students at Victoria College. In 1879 Dr. Bruneau was replaced by Dr. V. T. Daubigny. The French classes were soon entirely separated from the Montreal veterinary college and Dr. Daubigny, Senior, started in connection with Laval university "l'Ecole Veterinaire Francais" which has since become successively the Laval veterinary college; the faculty of comparative medicine of the university of Montreal under the title "L'Ecole de Medicine Veterinaire de Montreal," fusioneé avec L'Université de Montreal, of which Dr. F. T. Daubigny, son of the original founder, is the director, and he has every reason to be proud of the structure he has built on the foundation laid by his worthy father, with its most excellent facilities for scientific and practical teaching of all the branches of veterinary science. Well lighted lecture halls, spacious and well equipped laboratories, hospitals for large and small animals, commodious operating room, well stocked library, and a full corps of competent professors. Instruction is given, of course, entirely in French. This institution is the only one on the continent where this language is used and we who are English are just as proud of the school as are those more directly connected with it, and as the great majority of the people of this province speak French it is a source of no small gratification to those connected with the old Montreal veterinary college that its founder was a graduate of our college and that Dr. Daubigny, senior, had the courage and perseverance to carry on under very serious difficulties and was able to see before he passed away some of his hopes in process of being realized, and that his son, ably assisted by his confreres, have carried the good work on, and we have in Montreal today a veterinary school in every way the peer of any. May its future be worthy of its past is the best wish we can give our confreres.

Cows kept in box stalls produce more milk and slightly more butter fat than those kept in stanchions, according to the United States Department of Agriculture, but the slight increase in product does not balance the added expense for space, bedding, and labor. Box stalls are to be recommended only when maximum production is desired regardless of expense, as in testing cows for records.

Swine Problems in the South*

By Dr. A. T. Kinsley, Associate Editor

FROM the agricultural viewpoint, the southern states have been noted for their cotton production. It has been demonstrated that the production of a single agricultural commodity, although it may be profitable for a time, is not a sound policy and ultimately will result in failure. Diversified agriculture is much more enduring than a single crop farming but permanent agriculture is dependent upon live stock production.

It is apparent that more live stock and particularly meat producing animals can be profitably produced on southern farms. With the elimination of the fever tick, there has been a marked increase in cattle production in the south, but in spite of the many advantages the production of swine has not increased as it should throughout this section of the country.

Suggests Feeder-Pig and Stock-Hog Industry for the South

According to agricultural reports, it is possible to produce various grasses and particularly cowpeas and other legumes on thousands of acres of land that have been single cropped until it is not profitable. There is a constant demand for feeder pigs in the corn belt and these can be profitably produced in almost unlimited quantities in the south.

Successful handling of stock hogs is one of the important problems the solution of which is possible. The large majority of stock hogs are shipped from country points to public markets where they are immunized and sent forward to the feeder. Many of these stock pigs are purchased in small lots in various sections of the country. They are then collected at the shipping point, entrained and forwarded to the market. In some instances these swine are enroute several days from the farm to the shipping point and the public market. Stocker pigs that are enroute more than three or four days are usually stale and when such swine are simultaneously vaccinated the losses may be large. These losses can be diminished to a minimum by vaccination at the point of origin providing the pigs are healthy when vaccinated and are properly cared for during shipment.

There is golden opportunity for the farmers in the southern states to produce stock pigs for the feeders in the corn states, providing the swine are vaccinated before shipping. A veterinarian's certificate of vaccination is required for such shipments and therefore the development of the stock hog industry is largely dependent upon competent veterinary service.

Sanitary Surroundings Essential

Proper management, feeding and breeding and the provision of sanitary surroundings are essential to the profitable production of stock hogs. The fact must not be overlooked that intensive production and overcrowding is conducive to increased mortality of little pigs. The principal losses of swine, numerically speaking, occurs from the time of farrowing until the pigs are one month of age. It is generally conceded that 50% of pigs farrowed do not live to maturity.

Seven and a Half Million Sows Required to Country

According to reports, there was over ten per cent more brood sows on farms in the United States in the spring of 1922 than in 1921, but there was only eight per cent increase in swine during that same period. The average number of pigs farrowed is nine plus. Sows should produce two litters each year. The average number of pigs saved per litter of the 1923 spring farrow was 5.02 according to a limited pig survey conducted by rural mail carriers for the United States department of agriculture. If extensive statistics were obtained, it is very probable that the average pig production per sow each year would be found to be less than nine. Assuming that eight pigs is the average production per sow each year, then 7,500,000 sows are necessary to produce 60,000,000 swine. If production efficiency were increased to 80% the average production per sow each year would be fourteen pigs and it would only require 4,285,700 sows to produce 60,000,000 swine. That is, by increasing the production efficiency from 50% to 80% the same number of pigs could be produced by 60% of the sows that are now required.

*Read at Dixie meeting in Memphis, Oct. 10, '23.

It would, therefore, be more economical to increase the production efficiency than to increase the number of brood sows. The mortality of infant pigs is primarily due to improper swine management. This loss can be diminished by correcting the breeding methods, regulation of the feed, proper housing and providing sanitary quarters. It is true that the various factors conducive to infant pig mortality is under the direct supervision of the swine producer. It is equally true that excessive losses of live stock from disease or conditions that are preventable is indicative of an incomplete veterinary service.

Because of the importance of swine management including breeding and feeding it seems appropriate to briefly discuss some of the salient points.

SUGGESTIONS ON BREEDING AND FEEDING PROBLEMS

The boar is fifty per cent of the breeding herd. It is economical to use pure-bred boars for the breeding of stock hogs. Boars should be kept separate in a small pasture during the summer months. The winter care should include proper housing with ample bedding and a maintenance ration. A common mistake of breeders is that of keeping the herd boar too fat. The boar should be given a maintenance ration during the non-breeding season. From two weeks to a month prior to the breeding season, a ration of ground oats, barley, or mill run feed and skim milk or milk, should be provided. When possible, green foods should be supplemented and in the big type hogs it is advisable to supply extra quantities of minerals.

Select Prolific Milkers

Gilts for breeding purposes should be selected from families that are good milkers and prolific. They should have ten or twelve well developed teats. Breeding gilts should be provided with a growing ration. They should not be fattened. For two months after breeding, the sow can be fed a ration containing a limited quantity of fat forming elements, but they should be given a narrow ration during the last two months of gestation and the ration diminished from thirty to fifty per cent one week prior to farrowing. The sow should be provided with water but no food for one to two days after farrowing. The ration should be limited until the pigs are about ten days of age after which it should be gradually increased, reaching the maximum when the pigs are about three weeks of age.

The Breeding Age

The proper age for mating swine is a question of considerable importance. From general observation it would appear that mature animals of about the same age generally produce the best results. It is said that there may be some difficulties, particularly in farrowing when young sows are mated with aged boars. Aged sows may be bred to young boars, although some breeders contend that a mature boar produces stronger pigs and a larger litter.

Another important question confronting the breeder is the length of time that sows or boars can be profitably kept for breeding purposes. According to the results of most breeders, it would appear that sows are profitable breeders for about five years, during which time they should produce two litters annually or ten litters in all. The length of time that a boar can be maintained as a profitable breeder will depend upon the proper selection of sows to avoid the disadvantage of intensive inbreeding. Boars that have been properly cared for and used are usually serviceable for at least five years.

Gilts should not be bred until they are practically mature. The large type swine do not become mature until they are at least one year of age and these swine should not be bred until they are ten or eleven months of age. Smaller type swine mature at an earlier age and can be successfully bred when they are about six or seven months of age. The age at which a boar can be put into service varies according to breed. In large type swine the boars should not do general service until they are one year of age and even at that age the service should be restricted. Boars of the smaller type breeds can be put to limited service when they are six months of age.

Management of the Boar

A small pen should be provided for the boar into which the sow can be driven for breeding purposes, unless a crate is available. When the boar has made one good service, the sow should be removed. It is true that individual service breeding requires some time, but it will increase the pig production.

One of the contributing factors in the production of small litters and excessive loss of recently farrowed pigs, has been pasture breeding. It is not infrequent for a boar running with sows to make ten or fifteen services in a

single day. A single service is sufficient for the breeding of healthy animals and if animals are not healthy they should not be used for breeding purposes.

Uterine Infections a Problem

Infection of the pregnant uterus of the sow is relatively common and is an important factor in the loss of pigs. The results of uterine infection depend upon the virulency of the infection and the resistance of the sow. Infections with microbes of high virulency in a sow of low resistance may result in abortion, but when some are infected with microbes of low virulency they will probably not abort, but will produce pigs of low vitality and possibly one or more runts. Pigs farrowed by sows with uterine infection are probably infected at the time of farrowing.

Housing

Proper shelter should be provided, for nature did not provide swine with a coat of hair or wool to protect them against extreme weather conditions. Several hundred thousand pigs died as a result of exposure in March and April 1923, in the central states. Permanent hog houses are not in favor with many of the leading swine producers because of the impossibility of efficient disinfection and the difficulty of rotation of lots. Temporary sheds and farrowing houses that can be moved from place to place are preferable. Damp, musty pens and houses, and improperly ventilated hog houses favor the maintenance of various germs and are conducive to the life of animal parasites, thus further endangering the life of the recently farrowed pigs.

The Influence of Disease

Success in pig production is not only dependent upon proper management, feeding and breeding, but also upon the prevention of losses from various diseases that are always more or less prevalent.

Pyaemic arthritis is a diseased condition affecting recently farrowed pigs. This disease is characterized by inflammation of the umbilical tissue and suppurative arthritis. It is widespread and usually occurs as an enzootic. Pyaemic arthritis is due to infection which may occur in utero or after farrowing. The disease is, in the majority of cases, manifested within ten days after farrowing. The symptoms consist of lameness, swollen sensitive joints, diminished appetite and usually diarrhoea. The affected pigs usually have a diminished vitality and die within one or two days after the onset. The diagnosis can be verified by the post mortem findings which consist of omphalitis, suppurative arthritis and there may be metastatic abscesses.

The treatment of pigs affected with pyaemic arthritis is not, as a rule, satisfactory. This disease can be prevented by breeding healthy animals, only, and by providing sanitary quarters for the sow and pigs.

Scour in Pigs is relatively common and is the direct cause of excessive losses each year. Several million pigs die each year as a result of scour. Many swine breeders have lost ten to twenty-five per cent of their pig crop for several successive years from pig scour. This is essentially a disease of early life. Many theories have been advanced as to the cause of pig scour and when all theories and evidence are carefully considered it appears that this condition in suckling pigs may be infectious or of a dietary origin. The principal cause of scour in pigs that are not infected in utero, is improper diet of the sow. No doubt, infection with various microbian agents, especially the representative of the colon typhoid group, is an important secondary cause of scour in pigs.

The principal symptom of pig scour consists of diarrhoea. The discharges in the beginning are of a pasty consistency and of a gray or slate color. Later in the disease the discharges become watery and have a disagreeable color. The tail and hind parts of the affected pig become soiled, the appetite is variable, and there are usually colicky pains and an appearance of dejection.

Medicinal treatment is of little avail because affected pigs have a low vitality. The disease can be prevented by breeding healthy sows and by proper feeding. Pregnant sows should be placed in individual farrowing lots or pens at least one week prior to farrowing and they should be given partial diet of ground oats, barley or mill feed. All feed should be withheld for at least 24 hours after farrowing and then a restricted diet provided until ten days after farrowing, when the feed can be increased until a maximum production of milk is produced. By regulating the feed as above outlined, the mammary secretion is restricted and the pigs will not be gorged with excessive quantities of milk.

Bull Nose (Infectious rhinitis) is probably a specific infectious disease of pigs, characterized by inflammation of the mucous membrane of the nasal channel and related sinuses and by

involvement and deformity of the facial bones. Bull nose is rather prevalent but it is not very fatal but is responsible for the failure of development in affected individuals. Pigs are predisposed to bull nose that are kept in filthy pens and improperly ventilated hog houses. It is possible that the B. pyocyaneous is the specific cause of this condition. The symptoms manifested in bull nose consist of sneezing, watery discharge from the eyes and nose, which later becomes purulent. Affected swine have a tendency to root and although they may eat heartily they do not gain in weight. In the latter stages there will be bulging of the facial bones. This lesion is usually associated with a peculiar blowing noise. Bull nose can be readily and effectively prevented by providing sanitary quarters and by the proper selection of breeding animals.

Sore Mouth (or stomatitis) is a very common condition in pigs and is responsible for the loss of a great many small pigs each year. This condition primarily occurs in swine in filthy pens or in those that are improperly housed and are not given the proper rations. It especially occurs in pigs of large litters, probably because of under-nourishment. Various microbian agents have been identified as possible causative factors of stomatitis. The B. necrophorous produces a distinct type of the disease ordinarily designated as necrotic stomatitis. The symptoms of stomatitis consist of depression, listlessness, the affected pigs have a tendency to remain quiet, and there may or may not be diarrhoea. If the affected pigs are examined, lesions of various dimensions will be found in the mucous membrane of the mouth.

Stomatitis in pigs can be prevented by proper management of the breeding herd. This condition can be controlled by curetting the lesions of the mouth and applying some reliable antiseptic. When the disease has once made its appearance upon a farm, each pig should be carefully examined each day to determine whether or not any lesions exist and all affected pigs should be treated, as above described, daily.

Rickets is essentially a disease of malnutrition. It is probably a condition resulting from the lack of vitamines, calcium salts or the absence of sunshine. It occurs in the development of the pigs and is manifested by digestive derangement, associated with disturbance of locomotion. Rickets frequently affects all the pigs in a litter and it may affect all the pigs on the same farm. Rickets is a preventable disease. The disease is rarely observed in herds that are properly housed and fed. This condition is usually quite effectively corrected by proper feeding and the administration of lime salts in conjunction with codliver oil.

Pulmonary Ascaridosis is another very important disease of little pigs. The loss incidental to the larval form of the ascarid or intestinal round worm occurs in pigs from ten days up to thirty days of age. Infestation of pigs over thirty days of age with the larval ascarids rarely results fatally, although it will diminish the vitality of the infested pigs and they will not develop properly. Suffice to say at this time that pulmonary ascaridosis is a disease that is easily controlled. The essential feature in controlling this condition consists of rotation of pasture and hog lots, thorough cleaning and disinfecting the hog houses, and the administration of efficient vermifuges to expel the adult ascarid. On farms in which the above is carried out the losses due to pulmonary ascaridosis have been reduced to a minimum.

SUMMARY

Stock hog production is a profitable business if properly managed. Stock hogs can be produced most economically in the southern states. The losses of stock hogs originating at points remote from public markets can be diminished by vaccination prior to shipment.

A prominent veterinarian practicing in central Illinois contends that before the days of hog-cholera vaccination a veterinarian was never called to treat hogs except in very rare instances, although the hog raising industry was already large and important. Today, swine practice aside from vaccination is a growing entity.

By the nutrition of hundreds of generations the fate of the white races is indissolubly linked with their cattle. —Herbert Hoover.

Dairy breed heifers will show greater increase in live weight, and the feed cost per pound of gain is less, when self feeders are used.

Milk inspection service in small cities is practical and by expending a comparatively small amount of money a marked improvement upon the quality of milk can be obtained.—Parfitt.

The Creation of New Veterinary Medical Associations, Their Duties and Obligations *

By Dr. E. I. Smith, Nashville, Tenn. B. A. I.
Inspector in Charge.

YOUR progressive secretary extended to me a cordial invitation to read a paper at this meeting on some subject which I might select. Just what caption I should decide upon and what would be an appropriate one, was no insignificant matter to be considered. However, I assure you that I highly appreciate the honor and in a humble manner will endeavor to express some of my opinions regarding new organizations by the veterinary medical profession.

On July 27, 1922, there was created in the city of Memphis, the Dixie Veterinary Medical Association. Much enthusiasm was manifested and no opposition was offered, but several veterinarians conservatively discussed the advisability whether or not such an association should be seriously considered at this time. Those in favor of an immediate organization were much in the majority, consequently the necessary officers were selected, a committee appointed to draft a set of by-laws, with the understanding that the first meeting should be held in Memphis some time in October, 1923, and thereafter Memphis to remain as a permanent annual meeting place.

The writer frankly admits he entertained some doubt relative to the proposed plan, but had nothing definite to offer either way, inasmuch as it appeared that those who contemplated a new association had given the subject very careful study. However, since that time the matter has been fully discussed with a large number of veterinarians and they believe a new association will prove highly beneficial.

Legitimate Publicity Will Yield Results

The veterinary profession is now in the making, and every legitimate means which may be utilized to advertise the merits of the profession and increase its efficiency will yield immeasurable benefits.

These benefits will not only accrue to the veterinarian, but the public will receive more efficient service and come to have a higher and more lasting regard for the service of veterinary medicine.

* Read before the first annual meeting of the Dixie Medical Association, Memphis, Tenn., October 10-11, 1923.

Dixie a National Association

The Dixie Veterinary Medical Association has already been classified as a national organization, inasmuch as it invites membership from a large circle of states surrounding Memphis. The geographical location selected by the Association is an ideal one and bids fair to offer immense opportunity for the growth and progression of the Association. The nearby states of Alabama, Arkansas, Kentucky, Mississippi, Missouri and Tennessee are supporting a large number of high-class, well-qualified veterinarians who are working for a common cause, notably, that they may fulfill all of their obligations more efficiently each day.

With such a definite purpose in view, together with the growth and progression of the country, the increased value of livestock, and the interest manifested in the care and treatment of small animals, it is perfectly obvious why the profession in a given area should desire an association of a national character where they can come together once a year and exchange ideas on a broader basis.

Starts Off Under Ideal Conditions

This association is starting off under ideal conditions, with a clean restricted membership, and a corps of officers, diligent, faithful and sincere. Each officer and member of any association has a special duty to perform and numerous obligations to fulfill. The officers should keep their hearts and souls in the interest of the Association and strive from year to year to prepare a better and more instructive program, select such topics as may be of vital interest to the majority, search the field of practicing veterinarians, and encourage them to prepare a paper on some subject to which they have devoted some study and produced meritorious results. A special effort to secure outside talent is a very commendable one, notably, men who have earned a national reputation and who are specializing along some given scientific line.

Secretary's Office Should be a Bureau of Information and Publicity

A frequent communication from the secretary or president, imparting important infor-

mation or inviting suggestions encourages the membership and makes them feel that they are identified with one of the best associations in the world, and with one which is energetic and alive to the vital veterinary topics of the day. As the membership grows, the secretary's office might develop into a veritable information bureau. A good secretary is a rarity and it is safe to ponder well before letting a good one go. All information concerning the association, including proposed meetings, programs, definite date and place of meeting, should be early submitted to the editor of each veterinary medical periodical in America. Editors are anxious for such data and it is the duty of every secretary to promptly volunteer such information.

An Annual Report Valuable

It would appear to be advisable for the association to make provision at each meeting to the end that a complete report might be obtained. Further, this information, together with the papers presented, would furnish excellent material to combine into an annual report. All the members would highly appreciate these reports, either bound in book form or mimeographed and paper bound. Such an edition, would of course, include a complete roster of the association.

Suggest Recreative Entertainments

The extent and character of the entertainments is a matter for the members to decide upon. It is evident, however, that all of them expect some form of recreation and would be disappointed if none were provided. It is apparent that this feature of the program can be viewed from two angles, and the question arises, will one class of entertainment prove satisfactory to the members and their wives? Generally speaking, there should be no distinction as the ladies should be welcome to all the features on the program. However, it is not presumed that a boxing bout would have much attraction for the fair sex, nevertheless, this character of entertainment is legitimate and wholesome and it is safe to venture that the members would enjoy and sanction it. Before dismissing the subject of entertainment, it is a well-known fact that the height of entertainment is only reached when the ladies are present. Therefore, may I respectfully suggest that a special effort be made by the association each year to feature a ladies' program and provide them an opportunity for some means of happy recreation?

Help the Officers and Boost the Association

Members of the Dixie Veterinary Medical Association, you have made this splendid organization possible and this meeting has been a colossal success. Every feature of the excellent program has been accurately and orderly carried out and each of those names on the program has measured up to every requirement. You should lend your individual support to the newly elected officers, ready and willing to stand by them in the performance of their duties. When called upon by your officers make it a point to respond immediately and volunteer to do more if necessary.

When you go back home, tell those veterinarians who did not come that it was the best meeting you ever attended and bring them back next year as active members. An association of this kind needs both quality and quantity, it needs men who are living up to the higher moral standards of life and endeavoring to render a service consistent with the dignity of a profession equal to any profession recognized by the standard universities.

Associations too Few

As I scan the list of veterinary medical associations, the impression is gathered that they are far too few. Available records show up to date six national associations, thirty-four state associations, and twenty local associations. Now, these figures are by no means complete, but they are the very best our American Journals are able to supply. The list of national associations is undoubtedly correct. However, the others are known to be incomplete as very frequently secretaries neglect to report.

Dispel Petty Jealousies

May I call your attention to the necessity of always maintaining and over-striving toward closer fellowship? Enter a decree in your mind that petty jealousies shall never creep in and you will seek harmony at any cost. It is common knowledge that a number of associations have been either abolished or crippled as a result of factions headed by selfish and unrelentless leadership.

Court Press Publicity

One of the all-important duties for the association to perform is to insist that accurate and consistent information be furnished the press. The press is our friend and is constantly at our service. It is doing more to extol the virtures of the veterinary profession than any one agency in existence. Reporters do not willfully create undesirable headlines, neither do they wish to underestimate the veteri-

arians. They want authentic information, copies of programs and copies of papers in advance so they can early feature the merits of a meeting. This problem should be dealt with systematically and a publication committee appointed each year by the president for the sole purpose of aiding the press reporters. No other member should volunteer a word except to quickly pilot the reporters to some member of the committee. Clean and dignified headlines, together with an accurate description of the meeting, will splendidly repay the profession far beyond our happy expectations.

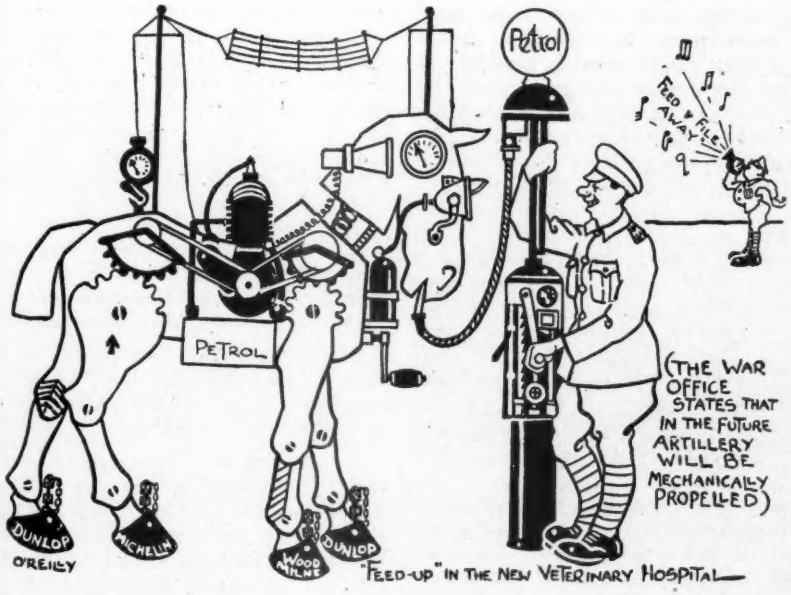
Believes in Federation of Local Associations

In this connection, each member undoubtedly is already identified with some state or local veterinary medical association which is dependent upon him as a unit for its existence. The smaller associations should be allies for the larger ones, therefore, our larger purposes will be defeated if the lesser associations are neglected. Bordering on this thought suggests the all-important obligation, notably, to become a member of the American Veterinary Medical Association and attend as often as possible. In 1924 it will be convenient for the members of the Dixie Association to attend.

I esteem it an honor to have had the privilege of attending this first annual meeting, and as you leave here for your homes, I wish you God-speed. Next year may you all return happier and more prosperous than ever and bring with you another enthusiastim member.

Let us ever remember that competition is keen not only at home, but all over the world. Therefore, it is up to us to daily increase our efficiency and there are three methods at our disposal—read the veterinary medical journals, study thoroughly each individual case, and always attend every meeting of the Dixie Veterinary Medical Association.

Professor Hobday's Annual Greetings



"FEED-UP" IN THE NEW VETERINARY HOSPITAL

With the Season's Greetings.

From
Frederick Hobday,
6, Berkeley Gardens,
Kensington · W.8.

Western Sneezeweed, A Poisonous Plant

Spewing Sickness

By L. H. Pammel, Associate Editor, Ames Iowa

Many years ago (1902) while botanizing and doing some work for the forest service on the grazing problems of the Uintah Mountains in Utah, I observed a great deal of the western sneezeweed (Helenium hoopesii), and I made the remark to the young man with me that evidently the sneezeweed is not good forage for sheep, as it was universally weeded out, that is, not eaten by live stock of any kind. I did not actually observe any cases of poisoning, as I was not at that time especially interested. No doubt, as I look back, some of the dead sheep in the Uintah national forest may have been killed by this sneezeweed. I have before me an excellent paper on the plant by C. Dwight Marsh, A. B. Clawson, James F. Couch and Hadleigh Marsh. *[3]

The authors give the summary of the historical part of the matter as follows:

In 1903, V. K. Chestnut, who was at that time in charge of poisonous-plant investigations in the department of agriculture, while visiting Sevier county, Utah, was told that a disease of sheep was prevalent in that part of the state. The disease was characterized by vomiting and wasting away, the sheep dying after a time varying from a week to a month. Nothing further was heard of this disease by the department until January, 1914, when the senior author, who was making an address to the stockmen of Salina, Utah, was told that the sheep on the summer ranges in the Wasatch Mountains suffered from a disease commonly known as "spewing sickness." The symptoms, as described, seemed to correspond fairly well with those caused by Zygadenus (death camas), and the men were told that this plant was the probable cause. A picture of the plant was shown, and some of them recognized it as growing on the ranges where the trouble occurred."

This sneezeweed is a perennial with somewhat fleshy leaves, which, when young, are hairy, but with age become smooth. The heads are large, ray flowers yellow, the disc flowers are brownish orange. It occurs at altitudes ranging from 5200-12,500 feet in the Uintah Mountains—it was most abundant at an altitude of about 7500 feet. The more important symptoms are depression, the pulse is weak and irregular and somewhat rapid, general weakness. The animals show marked restlessness, stiffness in gait, the temperature is practically normal, respiration is quickened, especially in the acute stage, salivation is pronounced. "Nausea was exhibited in many of the animals; it did not however, always result in vomiting. In some of the acute cases vomiting did not take place, although it did in some of those in which repeated forced feeding were made. Generally speaking, in the prolonged cases vomiting, or "spewing", as it is called by the sheepmen, is the most prominent sympton of H. hoopesii poisoning."

Coughing is also one of the symptoms. These symptoms are summarized by the authors as follows:

"The especially prominent symptoms, then, of H. hoopesii poisoning are general depression, weak and irregular pulse, weakness, and nausea, followed by more or less chronic vomiting. Vomiting is not a characteristic of the acute cases and does not always appear in the chronic cases. Apparently the chronic cases of sheep can be divided into two types—one characterized by extreme weakness with rapid and irregular pulse, and the other with the added symptom of vomiting."

The authors give the following summary:

Summary

1. The western sneezeweed, Helenium (Dugaldia) hoopesii, has become very abundant on some of the more elevated and overgrazed stock ranges of the West, especially in Utah.

2. The plant has been proved to be the cause of the disease of sheep known as the "spewing sickness" and has also been shown to be poisonous to cattle.

3. The symptoms produced by the plant, the pathology, and some of the toxic dosage have been worked out in detail, and it has been shown that a permanent, injurious effect may be produced upon the animals eating any considerable quantity of it.

4. The study of the habits of the plant and experimental work on methods of control have shown that little can be accomplished by attempts at extermination, and that restoration of the range by growth of other plants is an exceedingly slow process.

*Bull. U. S. Dept. of Agriculture No. 947:1-46 2D 5f. 1921.

5. The poisonous principle of *Helenium hoopesii* is an easily decomposed glucoside to which the name "dugaldin" has been given. This is a white, amorphous solid, soluble in alcohol, less soluble in water and chloroform. With tannic acid it forms a sparingly soluble compound which is only slightly poisonous.

6. There has been found no medicinal remedy which can be used effectively in treating poisoned animals.

7. From the practical standpoint of the man handling live stock on a sneezeweed range, it is important that the herders should know the plant and appreciate the serious results from grazing upon it. Then it may be possible by proper handling of herds to prevent most of the losses."

FOOD POISONING

Food Poisoning is the title of an interesting paper* by Dr. M. Levine. It is rather interesting to note the large number of outbreaks. Quoting from the paper:

"Jordan, through a press clipping bureau, obtained information of 1,032 outbreaks of food poisoning for the two years from October 1913 to October 1915. He records also that in three hundred seventy-five group and family outbreaks, 5,238 persons were involved, and estimates that there are probably fifteen to twenty thousand cases of food poisoning annually in the United States.

"Buchanan, in the fall of 1917 and winter of 1918 obtained evidence, through a press clipping agency, of 50 cases of food poisoning in Iowa. Of these, 10 were due to arsenic, strychnine, chloroform, etc., and there were eight outbreaks comprising 40 cases, attributed to "Ptomains". Home-made ice cream was responsible for 15 cases. Other foods mentioned were "weenies" and liver. There were no reports of poisoning attributable to either home or commercially canned products."

The author reviews some of the cases of food poisoning and various organisms connected therewith:

"Poisonings with the paratyphoid-enteritidis group may become manifest within a few hours after consumption of the infected food or there may be a long incubation period. Recovery may be rapid (2 or 3 days) or very slow (weeks or months). It is known that this group of organisms produces soluble toxic products which are reputed to be very resistant to heat. The organisms themselves, being non-spore formers, are easily destroyed. The cases of food poisoning, characterized by a very rapid onset (a few hours to a day) and quick recovery, are usually attributed to these stable toxic products; while the more delayed and prolonged affections are regarded as actual infections with live organisms."

One of the saprophytic organisms producing these poisonous toxins is the B. botulinus producing the so called botulism. Doctor Graham and his assistants consider that some forms of forage poisoning in the Mississippi valley are due to B. botulinus. Doctor Levine states:

"Cases of botulism have been very infrequently reported in this country although it is very probable that such instances are more frequent than we would be lead to believe from reports in the literature. About eight hundred cases have been recorded in Germany up to 1908 with a mortality of about twenty-five percent.

"In our country, a number of outbreaks were reported by Dickson. Most of these occurred in California and were due to eating home canned vegetables and even apricots; but more recently, outbreaks have occurred in Idaho, New Jersey, Ohio and several other states due, for the most part, to commercially canned olives, which had their origin, however, in California. Although it would thus appear that the disease is endemic in our extreme west there is evidence the organism is not restricted to that locality but it quite widely distributed.

"The types of food most commonly concerned are high protein substances, particularly meats, and as has been recently shown by Dickson, vegetables. The contention that fruit may also be implicated has not been generally accepted as adequately proven.

"Botulism poisoning differs from most other food poisonings in that there are usually no acute gastro-intestinal disturbances. The nervous system seems to be chiefly affected. Dizziness, double vision, difficulty in swallowing and occasionally vomiting are the salient symptoms. The temperature, pulse and respiration remain practically normal. The patients do not appear to be in pain but quickly become helpless.

The rate of excretion of arsenical preparations is an important factor not only in governing toxicity but also parasiticidal value. Pentavalent arsenicals are more penetrating into cell protoplasm than trivalent arsenicals.

*Reprint Proc. Assoc. Am. Dairy Food Drug Officials Twenty-fourth Convention Oct., 1920: 35.

The Milk Goat

By J. F. Shigley, Associate Editor

In a recent issue of a well known farm paper there appeared an article headed by this slogan "A Milk Goat in Every Backyard". From this one might well infer that the housing problem could easily be solved as the space required for an individual animal is limited. With a herd of goats attention must be paid to proper housing of these animals. As the value of the herd increases this problem becomes worthy of special attention.

The plans for goat houses will vary considerably according to climate, herd value and financial status and fancy of the owner. Permanent buildings should be erected with certain general principles in mind. Provision should be made for abundant sunshine, ventilation and proper drainage. Proper attention given to these details will provide a building that will be practically free from disagreeable odors that may affect the milk.

The floor may be constructed of concrete, cork brick or lumber. The cork brick is the most expensive of the three but makes the best floor. Lumber is cheaper and if the floor is well made it is a satisfactory substitute for cork brick or concrete. It has been suggested that steam or hot water pipes may be laid in loose cinder or gravel in or under the concrete floor for the purpose of keeping the quarters warm and dry.

Goats may be kept either in individual box stalls, in stanchions or a number turned loose in pens. The individual box stalls present a very attractive stable but increase the building cost. Every stable might well be provided with several box stalls to be used at time of kidding.

A pen fifteen feet square will provide accommodations for twenty to twenty-four kids or goatlings. Such pens may be provided with stanchions to be used during feeding in order to avoid loss of feed and to prevent fighting among the goats. Such stanchions may be placed eighteen inches apart for mature animals and twelve inches for kids or young goats. Suitable equipment for grain feeding may consist of boxes or tight mangers as the particular condition of housing may warrant.

The pens should also be provided with ledges or shelves made by fastening boards fourteen to eighteen inches wide along the side walls in tiers of three or four. These ledges should be so arranged that each successive ledge is shorter than the one below. With a runway to the first ledge the goats will easily reach each ledge. They apparently derive considerable enjoyment from occupying these ledges when not feeding. The ledges also serve as an apparatus providing exercise for the goats. The partitions should be of sufficient strength and length to prevent the animals from getting out into the runways.

A milking room should be constructed apart from the stable. This will prevent much of the odors of the stable from being evident in the milk. Such a room is desirable from the standpoint of clean milk production. Clipping of the legs and udder with frequent washing are important factors in maintaining a clean appearing herd.

The males should be kept apart from the females both in the stable and on the range. Apparently the male is the source of most of the "goat odor", especially during the mating season. If kept on a separate range in company with other males or wethers the vigor of the buck is maintained and he is able to care for more does during the breeding season. Milk production is decreased and breeding records are not accurate where the males run on the range with the does.

The fences should be well constructed, especially as applying to the corrals or ranges where bucks are kept. Woven wire makes the best fencing for large enclosures. Where barbed wire is used there will be injuries to the head, neck and udder or scrotum of the males which may cause death of the animal.

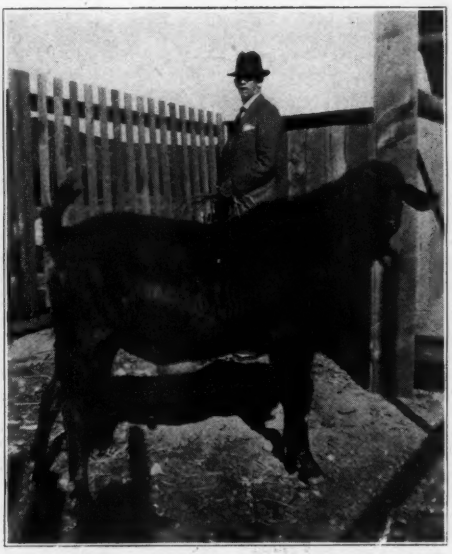
The corral where the kids and goatlings are kept should be provided with apparatus for exercise. For this purpose one may use boxes or a combination of boxes and boards. These serve to develop the muscles of the growing animals and give them an apparently necessary diversion.

The feed ration of the goat is based on the general principles of the food ration of the dairy cow. This ration must provide body maintenance and maximum milk production. Alfalfa, and clover hay, range grass in summer, roots, oats, straw and silage supplemented by a grain ration will give a variety of foods.

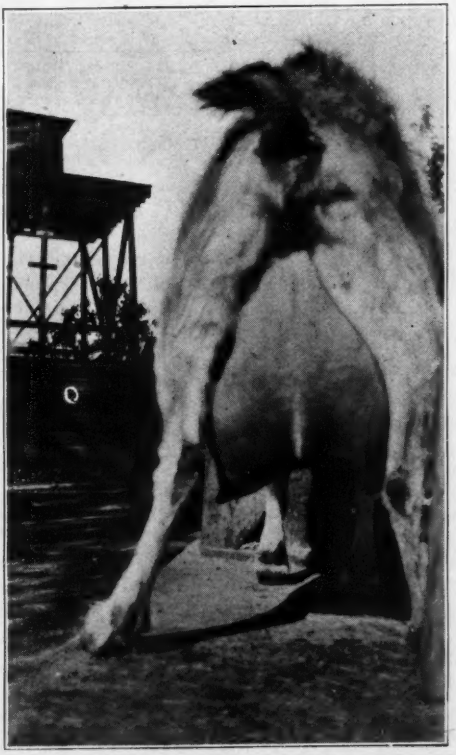
The following grain mixtures are recommended in the University of California Bulletin No. 285:

Nursing a babe from an Alpine doe in France.

Saanen buck, a promising sire, 14 months old, 170 lbs., reach, standing, 6 feet, 6 inches.

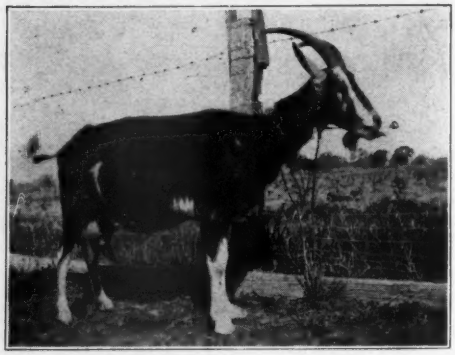


Bakri Bhil, Anglo-Nubian buck, 3 years, May, 1923, Warren's Ranch, Newhall, Cal. Service $10.00. Also Dr. C. D. Crutcher, who is interested in this animal.

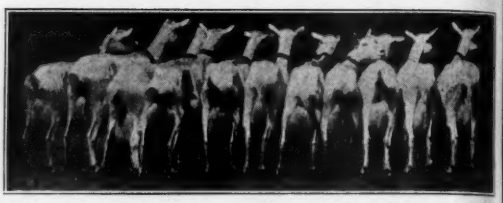


Toggenburg grade, ½ blood; milk yield after kidding, 5¾ quarts.

	Parts by weight
Rolled barley	1
Wheat bran	1
Dried beet pulp	1
Cocoanut meal	1
Dried beet pulp	1
Wheat bran	1
Oats	1



Princess de Savoie, Alpine, imported from France by Dr. de Langle, Yountville, Cal.



A string of Saanens—a $10,000 bunch

Cocoanut meal	1
Dried beet pulp	6
Rolled barley	1
Wheat bran	1
Cocoanut meal	2
Dried beet pulp	3
Rolled barley	1
Wheat bran	1

The quantity to be fed of these mixtures would be determined largely according to the individual animal. It usually ranges from one to two pounds daily. The total roughage and concentrates consumed will depend on the individual animal and calls for definite care and observation on the part of the herdsman.

Poisoning in Small Animals

By Oscar Schreck, M.D.V., New Haven, Conn.

The circumstances that usually excite the suspicion of poison in small animals are: the animal affected is suddenly attacked by severe illness, which comes on soon after eating, or drinking, without any premonitory indications, which regularly increase in severity without undergoing any important change in their character, and which rapidly prove fatal. All these however are far from affording sufficient evidence of poisoning.

Suddenness of attack is common we know to many disorders of the small animals, such as digestive troubles, apoplexy, epilepsy. Many of these diseases also may prove rapidly fatal; certain diseases of the heart sometimes destroy life in a few minutes, and often in a few hours. In no case therefore can these, which are commonly stated as general symptoms of poisoning, excite more than suspicion.

They may all have been produced by some spontaneously occurring disease. But on the other hand, the absence of any or all of them is not sufficient to disprove the suspicion of poisoning. Small and repeated doses of poison, may be given so as to produce all symptoms and death very gradually; and the animal may in such a case exhibit numerous alterations of increase and moderation of the symptoms.

Further; many circumstances will retard the action of even large doses of poison; if an animal falls asleep soon after taking or if he has taken it with a large quantity of food, or much diluted, or partially neutralized, its symptoms may not be developed for some hours, and may seem quite unconnected with the last occasion of taking food.

The chief symptoms caused by the internal administration of an irritant poison are those of severe irritation of some or all parts of the alimentary canal. They commonly excite redness and swelling, and sometimes ulceration of the lining of the mouth, throat, tongue, and gums; with difficulty of swallowing, retching and vomiting, tenderness on presure and tension of the anterior part of the abdomen. The matters vomited consist, first, of the food or other contents of the stomach, and afterwards of tough mucus with more or less blood and

bile; the sickness is almost incessant, and is usually accompanied by severe suffering. The pulse is quick and feeble; there is great prostration, and often considerable difficulty of breathing.

Many of these symptoms occur in all cases of poisoning by irritants, and many of them also in certain diseases, between which and poisoning it may be difficult to discriminate. Of these diseases the most important and deceptive are the acute affections of the digestive organs.

General Directions and Antidotes

To provoke vomiting: Warm water may be used, with or without salt, also with or without mustard. (One-half ounce to a pint of water) or ipecac (one dram of the powder, one-half ounce of the syrup for the very small dogs and for cats.) It is always best to give large quantities of liquid (from one-half to a pint at a time) whenever vomiting is to be excited in the small animals. The stomach tube, if accessible is better than emetics. Apomorphin (gr. 1/12 to 1/8 subcutaneously) is a reliable emetic, and always in the veterinarian's bag.

Bland liquids: Are milk, raw eggs, oils, mucilage, barley water, gruel, etc.

Stimulants: Are cold tea, coffee, whiskey, wines, etc., or ammonia and water (aromatic spts.) Or a teaspoonful of ammonia to teacupful of water will be enough for a dose. This may have to be spooned down, (be sure the animal can swallow).

Alkaline antidotes: Which are most likely to be found in every house, are ammonia and water (a teaspoonful in two teacupfuls of water) soap and water, lime, whiting, soda, chalk, plaster, magnesia, whitewash, wood ashes and even tooth powder.

Acid antidotes: The most commonly accessible are vinegar and lemon juice. In giving an antidote it is well to remember that it is not always necessary to wait for it to dissolve, but that it may be stirred up in any fluid at hand (except oil) and given immediately.

Antagonists: Are drugs which physiologically oppose the poison, as atropin to opium, chloral to strychnin, pilocarpine to atropin, etc.

Mercury Poisoning in Small Animals

By Oscar Schreck, New Haven, Conn.

Mercurial poisoning in small animals, is by no means rare, and is generally the result of giving bichlorid of mercury tablets by mistake, especially the uncolored tablets, and from antiseptic surgical dressings, and external applications in the treatment of skin diseases.

In many forms of skin disease in the small animals, mercurials are useful locally; but should be used with great care. Acting sometimes by a "resolvent" action or quickening of the functions of the absorbents; sometimes by stimulating the epithelial and other tissues also; sometimes irritation of "substitutive character"; and in some cases by a powerful caustic effect, also the cause of the disease known as eczema mercurial.

Eczema mercurial occurs about eight or ten days after the beginning of a mercurial course; it is ushered in by itching, first about the scrotum, vulva, thighs, elbow joint. These parts are rough and faintly red. Though the disease spreads over the whole body, yet the hind extremities are usually attacked before the front; the anterior part of the body before the posterior. The eruption is vesicular, the vesicles very minute, though in the progress of the disease they attain the size of a pea in some cases. When ruptured, they are commonly followed by irritable excoriations, from which a fetid discharge follows. Sometimes the hair falls out in patches. The disease runs its course in from ten days to two weeks. I have also observed this disease in a cat, from a single dose of mercury, and also in a toy dog, from an application of a few grains of red precipitate to the skin, treating mange.

The long-continued administration of calomel is also sometimes followed by unpleasant results, owing to the fact, that when the drug remains long in the cecum it is transformed into corrosive sublimate, and this may cause corrosion and ulceration.

It is not possible to say beforehand what amount of mercury will produce the characteristic effects in any given case. A single grain or a few grains may produce in one animal, what greater amounts will not in another. Normally the symptoms vary with the amount, and mode of ingestion. A debilitated state

such as is seen in many cases of mange, attended with great nervous irritability, is especially unfavorable for the use of mercury, in any form. If given or used freely at all, the pathological effects of the drug rather than the physiological, is almost sure to follow in small animals. Salivation is the most certain symptom. Sometimes however, this is produced by a minute quantity of mercury, and then no mercury reaction can be obtained from the saliva. Also gastro-enteritis, vomiting, mucus, billious or bloody diarrhea are common sequels of mercury poisoning. The character of the evacuations from the bowels is of great importance in showing the effect of this agent on the hepatic and intestinal secretions. When the evacuations are of a dark grey color, it is proof that the article has acted merely on the intestinal canal. When the evacuations become yellowish it proves that it has acted on the liver. The green color of the evacuations so common when calomel has been given, is owing not to the calomel directly, but to the intermixture of bile from the liver and gall bladder with the tough viscid secretions of the intestines. When, therefore these evacuations appear, it is proof that these organs have been excited into action. In many cases of disease of small animals this is important.

As a rule, ordinary care will early detect symptoms of constitutional action in the mouth, such as redness, heat, increased flow of saliva, and tenderness of the gums. These symptoms increase and diarrhea occurs, with vomiting, colic and tenesmus.

In severe cases, when the poisonous action of mercury has been induced, intense stomatitis appears, (common in the cat), with swelling of the tongue and gums, membranous deposit, fetor, loosening of teeth, and severe pain with more or less difficulty of mastication. In other cases the salivary glands become enlarged and tender, and a vast amount of secretion pours from the mouth. The pulse is found small, frequent and irregular, with pinched features, cold extremities, from faulty circulation; followed by convulsions, coma, and collapse. If somewhat protracted, skin eruptions may be seen.

Treatment. Give an emetic of ipecacuanha, if necessary, the poison should be removed as completely as possible, and then albuminous demulcent drinks freely administred. The white of eggs with milk are very suitable. Opium may be required for the pain and purging, followed by stimulants, both cardiac and respiratory. The symptoms of poisoning by corrosive sublimate are sometimes insidious, and after evacuation of the stomach a principle indication is to sustain the strength of the animal. The above is a method that has met with good results in my practice, and, if carefully carried out, will be found of value.

It has been generally conceded that the anemia particularly in animals infested with blood sucking parasites, was induced by some hemolytic substances secreted by the parasites. Recent suggestions and preliminary experiments probably gives some new light on this subject. It seems possible that the anemia is the result of hemorrhages in the animal body induced by a chemical substance that diminishes the coagulative ability of the blood and thus favors leakage from the capillaries or even larger vessels.

Breeding ewes for early lambing and treatment of lambs and ewes before turning on to pasture in the spring is effective in reducing the ravages of the stomach worm.

Alsatian Police Dog, Winner of Grand Championship, England.

A Case of Black Tongue, with Post-mortem Findings

By Jos. Goldberger, W. F. Tanner, Surgeons United States Public Health Service, and E. B. Saye, M. D., Pathologist, Georgia State Sanitarium

IT is highly probable, if not certain, that black tongue is identical with the experimentally produced pellagralike syndrome in dogs described by Chittenden and Underhill. The possibility, if not the probability, that this condition in the dog may prove to be the analogue of pellagra in man attaches unusual importance to any observations of the pathological condition in the dog that may aid in the determination of this question. With this in mind we desire to record the following clinical and epizootological notes and the gross post-mortem findings in a case of black tongue recently observed near the Georgia State Sanitarium.

Clinical and epizootological notes.—The animal—a black and tan foxhound (female)—was, according to the account of Mr. A. J. Collins, the owner, taken sick about noon, Friday, September 7, 1923. With 14 other hunting dogs this animal had that morning participated in a fox chase. The fox dispatched, the 15 dogs, including the one under discussion, were carried home in a motor truck. Mr. Collins states that on reaching home he offered his dog some food, and that its attempt to take it was so extraordinary as to suggest that there was something the matter with its mouth. On examination Mr. Collins found the mouth to be "sore." The next day, by way of treatment, he gave the animal a dose of a solution of hydrogen peroxide, and a second dose on the day after that. In the morning of the third day (September 10) he administered a dose of about 4 ounces of castor oil, and in the afternoon he gave the animal some eggs. The dog had been without food since the day on which the soreness of the mouth was discovered.

Through the courtesy of Mr. Collins we saw this animal about 7 p. m., Tuesday, September 11 (fifth day of sickness). At that time the animal was lying down in the yard of the Collins home evidently very sick, for she made no attempt to rise at our approach—just wagged the tail very feebly.

There were two other dogs, one grown and one puppy, in the yard, but separated from the sick dog by a fence, the gate of which did not close well enough, however, to keep the rather inquisitive puppy from passing back and forth at will. Mr. Collins had secured these two animals about a month before. They were apparently in good health and, it may be added, were reported to us as still in good health some five or six weeks later. Mr. Collins stated that he had always kept his dogs in his own yard, beyond which they could not go unless he took them out, which he did from time to time. He believes that they did not come in contact with other dogs up to the time of the hunt. He knew of no sickness among dogs in his neighborhood, and as he believes that he would be likely to hear of the occurrence of anything like black tongue, he is of the opinion that no cases had occurred before his own animal was taken sick. Here it may be remarked that, according to Mr. Collins, the dogs in company with which his own hunted were apparently well at the time of the hunt and have remained well since, at least up to October. 6, when he last saw them.

On examining the sick animal we found that the conjunctivae, especially the conjunctiva of the right eye, were much reddened, and there was some purulent secretion within the lower lid of the right eye. The owner stated that the eyes had been sore for about three weeks.

There was some drooling of ropy saliva. The lower jaw was soiled with this, and the forelegs where the jaw had rested on them were smeared with saliva and particles of garden earth.

The mucosa of the lips was found deeply inflamed with necrotic patches, especially on that of the upper lip at the site of contact with the canine teeth.

The jaws were closed and there was some resistance to our attempt to open them.

The buccal mucosa was found violently inflamed, and the tip and adjacent margins of the tongue were red. A very disagreeable odor was present.

We saw the animal again about 11 a. m. the following day. It was then unconscious and evidently dying. The condition of the mucosa of the lips and cheeks was as already noted.

In addition, it could be seen that the tongue presented a dark bluish patch on the left margin, one on the right margin, and a third on the under surface.

The floor of the mouth, which could not be inspected satisfactorily at our first visit, was now found to be severely inflamed. There was evidence that the animal had had a blood-streaked semiliquid bowel evacuation.

The animal died at about 11:30 a. m.

The usual diet of this animal consisted, we were told, of table scraps, including a little meat some two or three times a week. Late in July, in order to prepare the animal for the hunt, the owner reduced the allowance of the ordinary diet by about one-half, making up for it with corn bread. He sought, in this way to reduce the animal's weight and thus enable her to run better in the chase. This, he said, was in accordance with current practice of hunting men of that region in such circumstances.

He volunteered the information that, a year ago (1922), he had done the same thing with respect to the diet of this animal and that she had been taken sick in the same way, but the attack was milder and she had recovered.

He volunteered further that at the time when this animal sickened a year ago, he had been keeping another dog in the same yard, though on normal diet; but fearing infection in this other animal, he at once separated the two dogs. About a month after being isolated, having remained well, the dog was taken a few miles away to a trainer where, after about four weeks, this animal was taken sick with what the owner believed was black tongue, and died. Mr. Collins is of the opinion that, as he himself had done in the case of the other dog, the trainer had fed this dog principally, if not exclusively, on corn bread.

Necropsy

Necropsy begun at 2:45 p. m., September 12, 1923. Black and tan fox hound, female, died about 11:30 a. m. Rigor mortis is quite well marked.

Conjunctiva of right eye is pale. The left eye shows more marked inflammation than during life. Yesterday the right eye was the more severely inflamed. Some purulent exudate in the conjunctivae.

The mucosa of the upper lip and of the labiogingival fold is severely inflamed, with irregular, superficial, necrotic-appearing patches. This inflammation extends down on the gums, and the affected area is limited by a rather sharp line of hyperemia slightly, but at a varying distance, above the gum margin, being farther removed at the canines than at the molars.

The mucosa of the lower lip is involved in a similar process. No hyperemic limiting line is appreciable, however, although the inflammation does not seem to extend quite to the gum edge.

The buccal mucosa presents an inflamed and superficial necrotic process quite like that of the lips. The mucosa of the soft palate presents a quite similar inflammatory and superficial necrotic process as that of the lips and cheeks.

The mucosa of the dorsum of the tongue is grayish white in appearance, except over about the anterior third, where it is reddened, the redness being uneven, patchy. The redness is particularly marked along the margins of the tip and anterior third of the tongue. On the right side the redness extends back for about two-thirds of the length of the tongue, involving more particularly the under aspect of this margin. On the inflamed reddened portion of the left margin of the tongue there are some indentations or erosions with a greyish surface. This part of the margin presents two slightly separated, segments, each about 3 or 4 mm. in length, which are especially deeply inflamed and darkened in color. The right margin of the anterior portion of the tongue presents, like the left, a deeply inflamed hyperemic appearance, with a necrotic patch a little back of the tip.

The mucosa of the under surface of the tongue presents some superficial erosions or ulcers, three on the right side and two on the left. The eroded or ulcerated patches on the under surface of the tongue measure about ½ by 1 or 2½ cm. The mucosa of the floor of the mouth presents much the same inflamed appearance as does the buccal mucosa, except that the superficial necrotic process does not seem quite so severe. On each side of the frenum of the tongue there is a conspicuous oval fold of mucosa which is involved in the inflammatory necrotic process; each fold measures about ½ by 1½ cm.

The mucosa of the tonsils shows a marbled hyperemic appearance.

The mucosa of the pharyngeal aspect of the epiglottis is deeply congested. The mucosa of the fold extending from the base of the tongue to the epiglottis on the right side presents two superficial ulcerations. The mucosa of the epi-

glottis, tracheal as well as pharyngeal aspect, is deeply congested.

The trachea appears normal.

The middle lobe of right lung shows some irregular patches of consolidation and, possibly, edema. The left lung appears approximately normal.

Corresponding to the interventricular septum anteriorly there are a few punctate subpericardial hemorrhagic spots. The heart muscle and endocardium appear normal.

The liver appears normal. Adhesions (old) are present between the spleen and the omentum at the inner end of the spleen, at end near which there are present some extravasations along the line of some of the blood vessels of the omentum.

On the under surface of the omentum there are scattered dark points which, on close examination, appear to be minute varicosities of the minute omental vessels.

There is some adhesion of the capsule of the kidneys, a little of the cortex tearing away when the capsule is stripped.

The vaginal mucosa shows an inflammatory process with a superficial necrosis.

The esophagus presents irregular elongate patches of congestion, possibly representing effused blood. In the region of the pylorus of the stomach there is an area of reddened mucosa, within which area there are small patches of more intense congestion and perhaps effusion.

The duodenum presents three considerable patches of what seem to be submucous extravasations. Besides these there are other irregular smaller patches of practically the same character. In addition to the patches of seemingly submucous extravasation in the duodenum, several similar smaller patches are present scattered through the remainder of the small intestine, the jejunum and ileum.

In approximately the upper half of the large intestine the mucosa presents longitudinal reddened streaks, possibly representing submucous extravasations.

The mucosa of the lowermost portion of the rectum, close to the anus, shows marked congestion.

The stomach contained a yellowish flocculent fluid—probably food (milk and eggs). The large gut held a small amount of soft, deep brown fecal matter. One hookworm was found in the region of middle of the jejunum.

Summary

The outstanding points of interest appear to us to be (1) the acute development of symptoms following immediately on violent exertion (a fox chase); (2) the rapid course to a fatal termination; (3) the absence of known contact with any preceding case of black tongue; (4) the failure of any of the dogs that were associated and in contact with this animal at the onset of its attack to develop black tongue during a subsequent period of five to six weeks; (5) the history of dietary restriction during a period of about six weeks immediately preceding the beginning of the attack; (6) the history of a similar attack in the same animal the year before, following a similar restriction of diet; (7) the history of another fatal case under circumstances suggesting association with a restriction of the diet; (8) the striking lesions of the mucosa of the lips, floor of mouth, and undersurface, tip, and margins of the tongue, and of the cheeks.

The Sport of Kings

Clothing and Clipping Horses

By General F. Smith, D. S. O.

All lay writers on stable management have urged the necessity for hot or warm stables for horses; all veterinary writers have condemned the practice. Those who urge the system at the present day may be interested to know that it had its origin in the question of the amount of hair grown during the winter, at a time when clipping was unknown. Very little observation was sufficient to show that the horse kept in the hot stable grew a far shorter coat than the animal in the cold stable, and this fact was the basis of a practice which was also incidentally found to favor the putting on of fat, and the production of a gloss on the coat.

Thirty years ago no one thought of clothing the body of the troop horse, but since the general introduction of clipping in the service, there has been a very natural desire to replace in the form of a blanket that which has been lost by clipping. Many important changes have small, some even microscopic, beginnings. When clipping was first introduced, it was limited to the belly and legs; it gradually crept up the body, and trace high became an established standard. It then began to find its way up the front of the neck, while bolder horsemasters took the hair off everywhere but on the back and loins, and in course of time even this disappeared. The evolution of the troop horse into the clipped hunter has taken many years, and, on the whole, so far as limited clipping is concerned, the horse is the better for it. With the extension in the practice of clipping came the demand for blankets, a perfectly logical sequence, but representing extra cost in the maintenance of the horse, and therefore a subject for difference of opinion. At the present moment the necessity for clothing troop horses is one of the most prominent matters in horse management, and for this reason it is perhaps desirable to go into the question of cold and exposure more fully than would otherwise have been necessary.

The natural attitude taken up by the majority of people is that the horse must feel cold in winter, and that clothing is the remedy; while if the coat is removed by clipping, clothing is considered an absolute necessity.

Clothing for Unclipped Horses

Most half-bred horses are foaled during the late winter or early spring. For eleven months the foal has been living at a temperature of not less than 101° F., but in the course of a few minutes (normal foaling is very rapid in the mare) the young animal finds itself projected into the world, and deposited on the cold or wet ground, the surrounding air temperature being near or even below freezing point. This sudden change in temperature does no harm, and the foal in a very short time is on its feet.

The body requires less heat in the summer and more in the winter; this is automatically regulated by the nervous ssystem, the fuel being the food, the furnace the muscles, the nervous system the stoker. Examples of this law of production and regulation are numerous. Man can live on the equator or over the pole, the body heat remaining practically constant. And the same applies to horses. Jackson has proved that these may live at 80° N. latitude for two and a half years, and not even on the ordinary diet to which horses are accustomed. This explorer's observations on equines in high latitudes are of the greatest interest, and his experiences will be again referred to.

Exposure to a low temperature renders the body very sensitive to a rise in the thermometer. Heat may be complained of in the snow house of the Eskimo, in which the temperature does not rise above freezing point; and Jackson tells us that when the thermometer in July stood at its maximum, 8° F. above freezing point, it felt like midsummer, and was far too warm. To appreciate this fact, we have to remember his observations showed that in three years the thermometer never rose higher than 11° F. above freezing, while 70° F. to 80° F. below freezing, in a wind-stricken country, were quite common. Conversely, living in a high temperature renders the body more sensitive to a fall in the thermometer.

Quite apart from one's general knowledge, the facts mentioned above may be readily demonstrated by passing the hand from hot to cold water and vice versa. The cold water feels colder than it really is in passing from hot to cold, and the hot water seems hotter than it really is in passing from cold to hot. Applying this fact to daily life, it accounts for the feeling of cold in passing from a warm room in winter into the open air, and for the

feeling of heat on passing from cold air into a warm room.

If a part be persistently protected against the air, it becomes very sensitive to exposure; if it be habitually exposed a considerable degree of cold or heat can be borne with impunity. A good example is afforded by our own hands and face; it takes quite a relatively low temperature to cause the hands to feel cold, while little less than an arctic winter produces a feeling of cold in the face, and this in spite of the fact that the large majority of men keep it hairless.

This fact relating to the influence of exposure explains the indifference of children to short and low dresses, bare legs, and the absence of socks or shoes. It explains why women, who at all times wear far less and lighter clothing than men, enjoy immunity to exposure in evening dress. It explains why the street arabs in the cities of the north can go about barefooted and barelegged on stone pavements in the coldest weather. Primitive man wore nothing more than his progenitor wears today. Few facts in his travels impressed Darwin so deeply as the exposure the inhabitants of Tierra del Fuego withstood in a naked condition, living in one of the coldest and most tempestuous climates in the world outside the Arctic circle. In some parts the only clothing worn was a small patch of skin the size of a pocket handkerchief around the body, fastened by a string, the position of the patch being altered to meet the blast; many wore nothing whatever. The newly born were exposed like their parents, and the women at all seasons spent part of their time in the sea gathering food. The people did not die from cold; through long ages their nervous system had learned to regulate the heat supply, while exposure had conferred immunity. In a small way the fact is evident among ourselves; a man is not ordinarily conscious of baldness, or the exposure resulting therefrom, because the process is gradual. He cannot tell by any subjective feeling where the baldness ends and the hair begins. It is evident the skin of the scalp has contracted a comparative immunity to the sensation of cold. Turning once more to the naked savage, it is not until attempts to civilize them, by employing clothing and living under shelter, that lung trouble appears. Clothing and shelter weaken their resistance, and this has been proved true of all savage races brought under the destructive influences of civilization.

It is not generally known that when horses are turned out it is seldom, unless they are ill, that they take advantage of any shelter provided. Rain will drive them under cover—there are few things they dislike more—but cold they apparently enjoy; on a bright, frosty night they may be seen outside instead of under shelter, and even lying in the snow.

It is unnecessary to press this matter further. It cannot be doubted that the unclipped horse can live in the open without clothing, but if he is to work and maintain his condition he must be fed. Jackson's ponies lived in the open during sledging expeditions, they wore one blanket, and were exposed to an almost constant blizzard with a temperature of 45° F. below zero, at night. It is difficult to imagine the intensity of this cold until we remember that it was as far below freezing point as summer heat is above.

Clothing for Clipped Horses

The next point to consider is how far clipping destroys a horse's power of resisting cold. A horse clipped on a cold day very soon begins to shiver, arches his back, and his coat stares. He feels cold, and the heat-producing agencies (the muscles) by their rapid contractions (shivering) are producing more heat to meet the demand. There is nothing alarming in this shivering; the same will occur during the winter after a drink of cold water, and from the same cause. Still, it is a wise measure of precaution for a blanket to be worn for a day or two after clipping until heat regulation is established under the new conditions. This restoration is very soon effected; we can follow the process in ourselves after hair cutting on a cold day, or the removal of a beard. The loss of hair is distinctly felt, and may be evident up to the second day, but not later. This is a very close parallel to what occurs in the horse; a day or two after the removal of the coat the loss is no longer felt, and such animals may be exposed with as great impunity as an unclipped horse, provided they are fed. The importance of this statement is considerable; its accuracy is based on probably not less than 3,000 observations, and is undoubted.

Neither coughs nor colds need be expected to follow this Spartan system; they will be quite unknown. Captain F. G. Jackson, to whose work I have previously referred, has courteously informed me that his ponies never had a cough or cold. Towards the end of his explorations the last pony died, the only one the death of which could be attributed to exposure, but the temperature froze mercury, and the animal's daily diet consisted of two or three

dog biscuits, a few dried vegetables and bear's meat. Horses living in the open and performing hard work, especially if the thermometer be low, require to be well fed. Given that, they can be exposed with impunity.

In practice there does not appear to be any necessity for the hair to be removed by clipping from the entire surface of the body. Clipping trace high (leaving the hair on the legs) is ample to prevent sweating; modifications may be practiced by clipping all but the back and loins.

The necessity of leaving the hair on the legs is urged by some, not only for protection against thorns, as popularly and erroneously supposed with a hunter, but also on account of the additional warmth. The skin of the legs has no sweat glands, so the legs do not sweat; whatever is seen there has run from above, and in advocating the hair being left on the legs, the fact of this skin not sweating is taken into account. In theory there is no necessity to clip parts which do not sweat, but in practice fashion and appearance take the place of utility.

If it be admitted that loss of heat occurs when clipping is followed by no blankets, and that this loss can to an extent be avoided by using them, the question naturally suggests itself, why not employ blankets?

The disadvantages of blankets in stables may be summarized as follows:

1. If one blanket is used in the stable, two will be required in the open.

2. It is impossible to give two blankets to every horse on service owing to the increase in transport; they will at first have one, and as the difficulties in transport increase they will disappear.

3. Blankets naturally favor the spread of skin diseases, and on this ground alone their use should be interdicted in war, where mange is one of the first diseases to appear.

4. Horses that wear no blankets are less susceptible to cold, harder, better fitted to stand exposure in the open, but they must be well fed and cared for.

5. Blankets lead to "coddling." Units may be seen exercising their horses in blankets; draught horses on fatigue may even be seen wearing the harness over the blanket. The necessity for blankets has generally become so profoundly impressed, that there are commanding officers afraid to allow a troop horse to stand in the open, even for a few minutes, without a blanket being thrown over him, yet this animal may be required for war tomorrow!

The advantages of blankets are: (1) a smaller ration is required; (2) the horse is kept cleaner and is therefore less trouble to groom; (3) the coat wears a brighter look; (4) the horse looks more comfortable.

All these points are conceded, but they are not of that nature to prove blankets a necessity. Facts are sometimes difficult things to explain, yet the fact remains that no one has yet seen a well fed and cared for horse die from exposure to cold. We grant the additional comfort furnished by a blanket; but comforts are doubtful advantages, while actual necessities are few. The blanket-wearing horse has the whole of the belly and thighs exposed, but this is always forgotten, as the parts are out of sight, yet the exposed area is considerable, and judging from our own sensations the feeling of cold should be considerable. We know, however, that it is not so, and that the horse cheerfully lies on the cold and wet ground without contracting any chill through his exposed belly.

The center of hog production is about 225 miles from the center of population. The average distance that pork products are shipped by the packer is about 450 miles.

HYPERDERMA LARVAE ANAPHYLAXIS

I have just finished reading the article in the January issue regarding anaphylaxis from hyperderma larvae, and wish to advise that I have had probably fifteen or eighteen cases similar to the ones described, showing practically the same symptoms.

My theory is that this is a condition due to the cattle being housed all winter without much exercise, also being subjected to a deficiency of laxative food, and not being fed the proper amount of salt. I consider it a condition and not a symptom of a blood disease. The blood is too thick and does not circulate as readily as it does in the summer. When cattle are first turned out in the spring, they are overly anxious to get filled up on green grass and therefore stand with the head down a great deal, which does not allow the blood to return to the heart as fast as it should, owing to its being too thick.

In all my cases I have found that if the patient is tied up for a few hours and given a good cathartic and stimulants which will start the blood coursing through the arteries and

veins properly, all symptoms soon subside. I usually leave potassium nitrate to be given internally. I have also seen this same condition in horses, but have never known of any case to terminate fatally. I figure it is purely an interference with the venous circulation.

Byron, N. Y. B. M. Wallace.

FORMALIN TREATMENT SUCCESSFUL FOR PURPURA

Upon our return from Camp Custer, July, 1923, we brought back 50 remounts; these horses were purchased two weeks previously at the U. S. Yards in Chicago, and had been used by this regiment during the annual tour of duty.

Safe to say, we had plenty of shipping fever and strangles, but the one case of purpura is the case I want to tell about. This was a 1000-pound, seven-year-old, bay gelding, an officer's mount.

Now, my luck with purpura has been that of the average veterinarian—some good, some not so good—so I wanted something different, and remembered the article in VETERINARY MEDICINE by Dr. McDunn and decided to try his treatment.

To be brief, we gave this animal 2 drams formalin in 10 ounces of water via jugular at 2 P. M. At 8 A. M. swellings all over, muzzle, chest and legs, had receded over half, and I decided to hold over treatment to the next day. He never received the other treatment, and in four days he looked and acted normal.

Hubert H. Harz, Capt. V. C.,
122nd F. A., 33rd Div.,
Chicago, Ill.

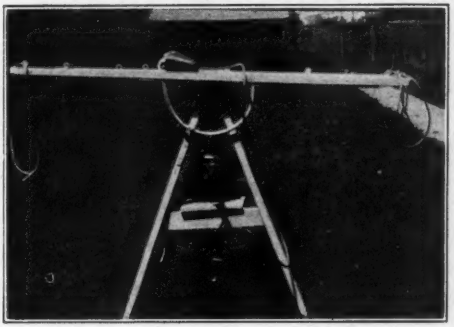
"HOME MADE" CHLOROFORMING OUTFIT

The accompanying illustrations show an operating table I made for dogs, with chloroforming outfit. It works fine.

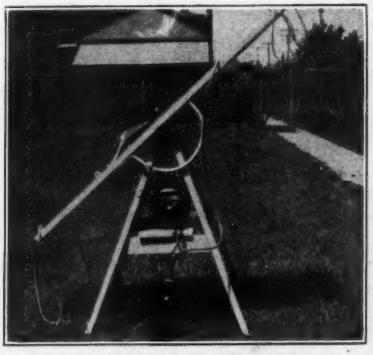
The top is 54 by 20 inches with a small strip nailed around both sides and one end. The legs are made like a saw horse, 19 inches long and 30 inches high. There is a piece of flat iron 19x1½ inches, screwed to the top and bent over at each end with a hole for a screw in each end to be attached to the "horse."

A piece of ⅜ inch iron forms a half circle (11 inches in diameter) with a piece at each end as shown in drawing, to be screwed to the top, with a thumb screw to attach to one leg for adjusting.

The chloroform outfit is as follows: I fill an acetylene tank with air at a garage. To this I attach a hose to a tube in a large neck pint bottle with a rubber cork having two holes through it with two glass tubes, one running to the bottom of the bottle and the other just through the cork. To the tube running to the bottom of the bottle, I attach the tank. The other tube runs to the top of the table which is attached to a leather muzzle, which ties over the patient's nose. This pint bottle is half-filled with chloroform.



I turn the air on so there are 70 or 80 bubbles a minute. It takes about 20 minutes to put them to sleep without any danger whatever. For cats, I have a box 20 inches long and 12 inches wide with a glass front in it, which I use for a door. I have a tube running through the box, which I attach to the hose from the chloroform bottle.



Through the glass one can see when the cat is asleep. Then to operate, lay him on the table and put the muzzle on, just as you do for dogs. I always chloroform cats for castration. By the time they come to, they are in the owner's basket and don't know what has happened and are not sufferers from fright for a week after the operation.

Louisville, Ky. Edward M. Lang

PECULIAR POISONING IN HOGS, DOGS AND CROWS

I am at a loss to know the cause of a very peculiar and interesting incident that has occurred in this vicinity and I am looking for an opinion.

During the last week of September, a farmer found his 23-year-old, fat, mare dead in the pasture. No external visible signs of death and she was seen the evening before as she pastured along the road. The owner started to remove the skin but noted a peculiar pungent odor, so he just split open the carcass and called the 80 heads of hogs to it. The next morning he found 25 dead hogs, 6 more acting as if poisoned by strychnine and they died. Three other pigs were observed to eat of the carcass and then walked away a few hundred yards when they showed distress by squealing and they stood rigid for a few minutes and died. A few hogs that ate of the carcass and showed some symptoms survived but later evidenced a purulent nasal discharge.

One of his neighbors had four hounds that I was called to observe two days after they had been allowed to eat of the carcass. These hounds were stiff and uneasy. A cathartic was administered and they promptly responded to the treatment. Three days later these hounds re-visited the carcass and two of them died within a half mile of the carcass and the other two were purged and recovered. There were ten dead dogs found in the vicinity of the carcass as well as about two dozen dead crows. In my experience in the U. S. service repeated unsucessful attempts were made to kill crows with strychnin.

The owner is certain that there had been no drugs given to the mare and no poisons placed about the carcass. There was no opportunity to autopsy the hogs or the dogs. What is your opinion as to the cause of death of the mare, dogs and hogs. There is no legal fight or any hard feelings connected with this affair so you may feel free to express your opinion and it will be appreciated.—E. T. M., Iowa.

Reply: It is evident that the carcass of the 23-year-old mare was primarily responsible for the death of several hogs and dogs and some crows. The history, symptoms and course of the condition in the hogs, dogs and crows that had access to the carcass indicates poisoning. The diagnosis of poisoning is further substantiated by the fact that the animals became affected immediately, there being no period of incubation. The disease was apparently not of an infectious nature or other animals would have become affected. Although the symptoms were probably similar to those of strychnin poisoning, the history tends to eliminate that possibility and further as stated in your inquiry it is difficult to fatally poison crows with strychnin.

It is very probable that some organic compound probably of putrefactive origin was the cause of the symptoms and death in those animals that ate of the carcass of the dead mare.

This is an interesting report and if any reader of VETERINARY MEDICINE has a different opinion than that given above, we shall be pleased to publish it in a future issue.—A. T. K.

DIGESTIVE DISTURBANCES IN HOGS DUE TO DIGESTING GRAVEL

Some advice on a herd of hogs will be appreciated. The hogs in question have been in a lot through which a small stream flows. There is some gravel on the banks of the stream and there is a gravel pit in the hill side to which the hogs have access. These hogs have recently been running in a field hogging down corn and a mineral mixture has been accessible to them when they were in the lot.

The principal symptoms evidenced consist of bloat and colicky pains. The attack is usually acute and terminates fatally in some instances. The small intestine is found to contain varying quantities of small pebbles and stones on autopsy. Eleven and one-fourth pounds of pebbles and stones were found in the intestine of one pig.

Any suggestion will be gladly received.—F. O. L., Nebr.

Reply: Pica or depravity of appetite may be an indication of parasitism or some other digestive derangement but is most frequently the result of some deficiency in foods. Although you state there is a mineral mixture accessible at all times it may not be palatable and therefore the condition in the herd may be due to mineral deficiency.

The treatment for pica is largely dietary in which the ration should be properly balanced and should also contain ample mineral supplements. In addition the herd in question would probably be benefited by catharsis induced by a saline purgative which can be administered in the drinking water.

VETERINARY MEDICINE will be glad to have the opinion of readers on the above case.—A. T. K.

LOSS OF CATS FROM DISTEMPER

My territory is getting almost depleted of cats and my clients are worried. I am not well enough acquainted with cat diseases to give them any assistance. These cats suffer from snuffles which I believe is a highly contagious diseases. Practically all cats irrespective of age become affected. They discharge from the eyes and nose, eat nothing, sneeze a great deal, and eventually die. Is there is a biological product indicated, and what is the proper medical treatment.—Iowa.

Reply: As indicated on the Purely Practical Page, Dr. Lames of Dysart, Iowa reports that nuclein (Abbott) in ten drop doses hypodermically is almost a specific for the contagious catarrhal disease prevalent in that state. Dr. Mundhenk of the Abbott Laboratories states that an autogenous bacterin given with Nuclein is a good treatment.

FATAL DISEASE OF CATS IN OHIO

Is there an infectious disease among cats that cause them to become suddenly paralysed, lie down apparently asleep and die in a few hours? I am sending you a cat that died today for examination.—Ohio.

Reply by R. L. Mundhenk: In spite of the advanced state of putrefaction of the specimen it has been possible to isolate three organisms from the material: a streptococcus, a colon-typhoid organism and a member of the proteus group. An autogenous bacterin has been prepared from this material which should be used either for prevention or treatment, starting with 1 cu. cm. doses, gradually increasing the amount, giving injections every third day. This should be backed up with laxative food, intestinal antiseptics (preferably sulphocarbolates), tonics, etc. as indicated.

It would be very desirable if you could supply us with a fresh animal.

THE BIER TREATMENT

What is the Bier treatment sometimes referred to in journals? I do not find it described in the dictionary nor in any of my text books.—Indiana.

Reply: The Bier treatment consists of mechanically produced hyperemia. The part, a leg for example, is wrapped tightly above the seat of a pathological process, so as to obstruct the flow of blood heartward. The theory rests upon the supposition that hyperemia being a part of every inflammatory process it is the natural stimulant to the regenerative process and that increasing it mechanically coincidently increases regenerative activity. It was thought, at least by Bier and others, that healing progresses more rapidly when the circulation is thus controlled.

The treatment has never been popular among American veterinarians, and is, we think, practically obsolete.

PRESCRIPTION FOR PARASITIC MANGE

"A dressing I applied exclusively was that used by the army. I give you the prescription, and from personal experience I found no reason to complain of its efficiency. It gives splendid results:

℞

Ammoniated mercury	3 drs.
Sulphur sublimate	4 ozs
Carbolic acid	4 drs.
Lard	16 ozs

Make an ointment.

Clip the body and limbs all over. Rub into the affected areas. On the following day wisp the body vigorously. Repeat the grooming in two days, then reapply and continue as before.—McCann in Veterinary News.

TREATMENT OF STRANGLES

I shall be very thankful if you will give me the most successful treatment of strangles in the horse, in the next issue of VETERINARY MEDICINE.

Reply: Strangles of the horse is no longer regarded as a special disease. It is the glandular manifestation of the infectious bronchitis that complicates influenza, and is only distinguished from ordinary "distemper" by the age of the animals affected. Good care, laxative feed, simple febrifuges, attention to the abcess when they ripen, antiseptic steamings, and anti-streptococcic serum is about the line of treatment to follow.

LICE IN HOGS

Will you please give me a good, practical remedy for lice in hogs? I know that the dipping vat or the hog wallow is probably the best for large herds when the weather is suitable, but I practice in a region where hog herds are small (15 to 20 head), and the wallow is no use in winter.—Ohio.

Reply: A good way to handle louse-infected hogs in small numbers is to confine the bunch in a small space and sprinkle them well with crude oil by means of a sprinkling can. The treatment will be more effective if each pig after

the sprinkling is caught and the oil disseminated by rubbing, especially into the groin, axilla and ears. In lieu of crude oil, equal parts of kerosene and mineral oil or cotton seed oil will answer. These oils can also be applied with the ordinary spray pump.

The owner of a small hog herd should construct rubbing posts (hog oilers). Posts wrapped with burlap sacks kept soaked with crude oil, or patented oilers of which there are a number on the market have merit, although they should not be depended upon entirely to handle the louse situation. Every veterinarian should get a copy of Farmers' Bulletin No. 1085, entitled Hog Lice and Hog Mange, procurable from the U. S. department of agriculture.

MELHUISH THEORY OF THE CAUSE OF MILK FEVER

In the November issue of the VETERINARY MEDICINE, page 1014, appears an article on parturient paresis written by Dr. S. L. Stewart.

I hope the doctor will take no offense if I venture to give an opinion of what I think is the real exciting cause of the trouble.

You may find the so called parturient paresis, or milk fever, in the cow before calving as well as after. I think the trouble is due to milking the cow shortly before calving time or too soon afterwards. Now to consider a hypothetical case: I have been called to the stock yards and find a cow down and showing the typical symptoms of parturient paresis. I tell the owner the cow has milk fever—he says "Nonsense the cow has not calved yet." I make an examination of the udder and find the milk has a normal appearance, no sign of colostrum nor yet a yellowish tint. I make enquiry and am told the cow has been shipped in a car with young cattle or stockers; has been unloaded into a pen with these younger animals and has been sucked dry by them. This will bring on the trouble. Again, the owner sees that the cow has an exceptionally large udder before she calves, thinks it is causing her pain, and milks her out. In either case it may bring on the trouble.

Secondly, after a cow calves the calf is taken away immediately and the cow is milked dry. This is done two or three times daily (as the dairyman is anxious to get the milk) and this again will bring on the trouble. I am still convinced that the exciting cause is due to the milk being drawn from the udder shortly before calving, or milking the cow dry too soon after calving. I will admit that many cows which have been milked out in this manner do not have milk fever or parturient paresis, but it has been my experience that the trouble is due to the above mentioned causes. I may be wrong but surely I have seen parturient paresis too many times accompanying the foregoing conditions for it to be ascribed to a coincidence.

A. E. Melhuish Toronto, Ontario

MILK FEVER IN A GOAT

One Sunday morning, some months ago, I was asked to go and see a goat, due to kid in a few days' time, which was unable to rise and thought to be dying. On arrival there, I found the goat lying in a state of coma, with her head resting on her shoulder, temperature subnormal, and respirations slow and deep. Not having seen this condition in goats before and for want of a better name, I diagnosed milk fever. I ordered the man in charge to empty the quarters, which I inflated to a fairly firm pressure with air from an ordinary milk fever syringe, fitted with a needle of smaller calibre than is usually used for the same purpose in the cow. Pieces of tape were tied on the teats to insure that the air did not escape, since, for the moment, I had partly forgotten the anatomy of the goat's teat and the power of its sphincter muscle. The remainder of the treatment consisted in the administration of small doses of stimulant medicine every two or three hours.

In about an hour's time the goat showed signs of regaining consciousness, and in another hour and a half was on her feet and able to walk about.

At 3:30 a. m. the following morning I received an urgent message to go and see the same goat, which was staggering and about to lose the power of her legs. I went down, drew off what remained of the air in the quarters from the previous inflation, and refilled them.

That day I received word that she had kidded two male kids, and was up and doing well.

While dealing with this condition in the goat it may be of interest to describe two other cases in goats in which the same symptoms were shown, namely: paralysis and coma; but in both these cases the animals were in full flow of milk, due to one having kidded two months and the other three months previously. The treatment in both these cases was the same as that used for the case I have described above. A few hours sufficed to see both on their feet, with all signs of paralysis and coma gone.

Two of these goats were, a short time afterwards, shown and awarded cups in their re-

spective classes, one of which was won at the recent show in London.

Since I am as yet a comparatively young member of the profession, I would be interested to know if other older and more experienced country practitioners have found this to be a very common condition in goats.—W. Burke McAleer, M.R.C.V.S. in The Veterinary Record.

SUCCESSFUL REMOVAL OF ENORMOUS KELOID

The accompanying illustrations represent a very extensive keloid growth following an injury from a wire cut. The patient was a nine-year-old, fifteen-hundred-pound gelding. The wire cut occurred in early December, 1922. Not long after the injury, there was a distinct tendency toward excess formation of granulation tissue. The animal was brought to my attention on May 4, 1923, presenting the following trouble:

A keloid growth weighing about twenty-three pounds was firmly attached to the lateral aspect of the left hock. The base of the new growth was about ten inches in circumference without a perceptible pedicle. All of the outer surface of this mass was badly infected and suppurating extensively. The gelding, normally a fine looking animal, was in very poor condition and the weight had dropped to about twelve hundred pounds. On May 5 the animal was cast and the area and base of the neoplasm was thoroughly cleansed. A ligature was applied above the hock. Dissection of the tumor mass was started at the posterior aspect where it overhung and firmly attached to the structures of the limb: Progressive dissection continued with due attention to ligation and control of the copious hemorrhage which ensued.

The central point of attachment was extremely vascular many large veins being imbedded between the tumor mass and the true tissue of the hock. After removal the remaining vessels were ligated; an antiseptic pack applied and the whole area tightly covered with a bandage. At intervals during the healing of the wound, an antiseptic dusting powder and white lotion were applied. Alterative treatment and a rich diet with plenty of green food was also recommended. As the other picture shows recovery has been almost perfect and, beyond a slight thickening and a small scar, there is little remaining evidence of

the former massive growth. The post operative picture was taken September 15 or approximately five months after the operation. This case has seemed to me of especial interest, not only because of the massive size of this new growth, but also because of the regeneration of tissue which followed.

Laurens, Iowa P. E. Fagan

OSTEOPOROSIS IN HORSES AND MULES

Big head, called "Cara (face) Inchada (swollen)," is also quite common in this country. Shortly after the writer first came to Brazil for the Sao Paulo Government, some half dozen horses and mules affected with osteoporosis of the bones of the face were collected from various sources and sent to the Instituto de Veterinaria for experimental treatment. However, owing to lack of organization of the Experimental Division, treatment was not begun, but in a few weeks for some, and a few months for others, under the change of location—feed and water—or all three—apparent complete recoveries had been made in all of the animals.

The writer has observed similar results a number of times in cases so handled in the States.

Lavras, Minas, Brazil. G. A. Roberts.

SOME COLICS OF THE HORSE AND THEIR TREATMENT

Gentlemen:

In cases of indigestion and impaction in horses following the eating of too much corn or oats the treatment should be two capsules of salicylic acid by the mouth with one-half grain arecolin and one-half grain strychnin hypodermically. Repeat the arecolin and the strychnin in one-half hour and follow with an aloes bolus.

It is well to massage the posterior bowel. In a short time gas will pass from the rectum and the patient will be on the road to recovery. In cases where a partial twist is present this treatment is successful. In fact this treatment will fit more kinds of "colic" than any other. The arecolin is contra-indicated only in auto-intoxication and inflammation of the bowels. These cases are easily recognized by the weak bounding pulse, cogested mucous membranes, trembling muscles of shoulder and hip, profuse sweating, severe pain and in the later stages cold extremities and a very weak heart. Arecolin should never be used on these as it only hastens death although it can be said that death generally follows any other treatment also. Colics are about the most embarrassing thing the country doctor has to treat and arecolin when used on proper cases is a life saver for him, as it saves more cases of colic than any one drug but will kill when used where contra-indicated.

The stomach tube is of much value in some colics. In cases where the horse sits down on its haunches indicating an impaction of the stomach or bowel directly behind the stomach; the stomach tube is the only effective weapon that we have and it saves some of them. Arecolin is dangerous in such cases and should not be used.

In some animals we find symptoms of colon impaction; the horse backing up against the wall, lying down and getting up, periods of apparent quiet, the lack of bowel movement and a repetition of some of the above. We give usual treatment and get the bowels to move and think our patient is all right but to our surprise he is no better and we go ahead and treat him for several days only to have him die. These cases are a rupture of the diaphragm, permitting the bowel to extend through into the thoracic cavity.

It is very rare indeed that we have a case of "water-colic" but they do occur and can be recognized easily. The poor animal is in terrible agony, rolling from side to side without a minute's rest and sweating profusely. The only thing one could confuse it with is azoturia and the color of the urine when drawn and the history of the case would make certain the differentiation. These animals are of course relieved at once when catheterized or enabled to urinate. Remember such cases are very rare.

In flatulent colic it is rarely necessary to puncture the cecum if one will use salicylic acid and arecolin. Puncturing bowel is oftimes dangerous and should be avoided where not certainly necessary.

The stomach tube is indicated in cases of indigestion which occur after the animal has been fed and watered following a hard day's work. In these cases the trouble lies in the stomach and consists of a quantity of undigested semi-solid food which should be washed out. The history should almost determine this diagnosis for us but the symptoms are great pain, sweating and rigor of the shoulder muscles.

The symptoms of the different colics are always uniform, different colics may have the

same symptoms in common to a certain point but from that point on each kind has symptoms all its own which can be relied on. I am convinced that we still make many mistakes in the diagnosis of these cases but think we are getting better and better at it.

St. Peter, Minn. R. A. Dean.

CATTLE DYING OF PARASITISM
(Esophagostomiasis)
By Dr. A. T. Kinsley

The loss of live stock due to parasitism is far more frequent than is ordinarily suspected. Esophagostomiasis is caused by the larval form of the esophagostoma. Disease resulting from these parasites occurs in various sections of this country as well as in most foreign countries. The disease is usually sporadic but in some instances it becomes enzootic. Esophagostomiasis in cattle in Missouri was recognized by Luckey several years ago. Just recently, Dr. Roy Morgan reported this disease in two different herds in Northwestern Missouri. There were approximately 50 head of cattle in each of the herds reported by Morgan and both lots of cattle were purchased at the same market during August, 1923. Although the cattle in these two lots were apparently not of the same origin and were on different farms the disease occurred about the same time in both herds.

Affected Cattle Have Profuse Diarrhea

Infestation with only a few parasites may cause unthriftiness, but extensive infestation produces grave disturbances manifested by profuse diarrhea, rapid emaciation, cachexia, coma and death. Only a few animals in a herd may be affected in the beginning but in the course of time fifty per cent or more of the herd may succumb to the disease.

Diagnosis Confirmed by Autopsy

This disease is difficult to diagnose in the beginning of an outbreak from the clinical symptoms. If the disease occurs in mature cattle it may be mistaken for Johne's disease. The diagnosis of esophagostomiasis can be confirmed by autopsy. The diagnostic lesions consist of larvae embedded in the submucosa of the small and large intestine. The larvae migrate into or through the intestinal mucosa and form cysts varying in size from a millet seed to a buckshot. The lesion may contain pus or become caseous due to infection with pyogenic microbes. The intestinal lesion of bovine esophagostomiasis is rarely if ever visible through the serous covering but is readily observed by exposing the inner or mucous membrane as cysts or small nodules.

The Value of Treatment Variable

The exact life cycle of the esophagostoma inflatum is unknown and therefore preventive treatment is problematic. When possible, all apparently healthy cattle should be separate from those affected and moved on to new pastures and lots and the affected animals should be placed in quarters that can be cropped the following season. The use of ferrous sulphate in the salt and also in the feed may be of value. Some isolated herds have been treated with apparent success by medicating with ferrous sulphate. It is possible that oil of chenopodium may be of value in these cases. It should be remembered that treatment is of little avail in dislodging the encysted larvae.

AGALACTIA

Will the vaccination of a sow with suckling pigs cause agalactia?—Illinois.

Reply by A. T. Kinsley

It is assumed that by vaccination is meant the injection of antihog-cholera serum or the simultaneous injection of serum or virus.

The injection of antihog-cholera serum alone produces only a passive immunity and does not cause a reaction, therefore, the injection of serum alone would have no influence on lactation. The simultaneous administration of serum and virus into a susceptible hog produces a reaction and there may be some variations in the functions of different organs and glands, however, agalactia has not occurred as a result of the use of serum and virus or at least no such cases have been reported. If there is a severe reaction and a high temperature following the use of serum and virus there will be a diminution of milk.

GOITRE

Is goitre a very prevalent disease of pigs and in what section of the country does it occur chiefly? When practicing in Illinois I never saw a case but here we met a condition of pigs manifested by swelling of the throat with considerable frequency. What is the treatment.—North Dakota.

Reply by A. T. Kinsley

There has been some loss of pigs due to goitre. These losses have occurred particularly in the northern section of the United States. Goitre appears to be due to a deficiency of iodin or iodin salt in the food. The affected pigs usually show an enlargement in the throat region at birth. In many instances they are hairless and are born dead. It can be prevented by administering iodin or iodin salts to the sows during the period of gestation.

COMMENTS REGARDING SOME RECENT REPORTS IN VETERINARY JOURNALS

Ruptured Aorta in a Large Sow

One of the large pure bred Duroc sows belonging to the Escola Agricola ate heartily one evening recently and the next morning was found dead. Autopsy revealed the thoractic cavity well filled with clotted blood. On further investigation a large rent was found in the posterior aorta near the curvature. The edges of the torn aorta were noted to be quite thin, and rough on the outer side, with a number of kidney worms, Stephanurus dentatus, in the adjacent tissue.

The worms had encysted themselves so close to the aorta as to thin and weaken the vessel wall which finally gave way and the hog bled to death.

Use of Trypan Blue (Trypanblau)

Trypan blue, "azul de trypan" in Portugese, has been quite generally used in Brazil since 1911. Due credit has been given in this country to Nuttall for his discovery of the beneficial use of trypan blue in pirplasmosis of dogs in 1909, and later in piroplasmosis (tick fever) of cattle.

The greater use of the above mentioned drug has been in treating piroplasmosis of cattle, especially when immunizing against tick fever, but it has also been reported favorably when used in treating piroplasmosis (malaria) in dogs and horses.

Tick fever, known as "tristeza", is still a great drawback to the improvement of the cattle of this country. Immunization of imported animals is usually accomplished by injecting virulent blood from a native animal. When the animal begins to show conspicuous rise in temperature it is given a dose of trypan blue. The dose per adult cow is usually about one gram dissolved in 100 cc. water, 1%. It is commonly administered subcutaneously but may be given intravenously.

BREAKING AND TRAINING COLTS

If a horse is to reach the stage of full value and usefulness possible for an animal of his type and class, he must be carefully broken and well trained when young, results which frequently are not accomplished by many horsemen. The best methods and practices for making a good work horse out of a good colt prospect are described in Farmers' Bulletin 1368, Breaking and Training Colts, a revision of a former bulletin, which has just been prepared by the United States Department of Agriculture.

MUSINGS FROM OLE VIRGINIA

I should like to congratulate the editor for his truthful exposure of the prevailing conditions under which the veterinary profession is existing.

We have been playing the "ostrich game" and crediting the mirage of good time ahead which the manufacturers of veterinary products have been dangling before us too long. One must admit that the veterinary profession is a copartner with the past, present, and probable future agricultural depression, but there are many intra-professional matters which should tend to make our work more remunerative to ourselves and attractive to embryo veterinary students I shall mention a few which I deem need immediate attention:

Biological Preparations. There is more truth than fiction in your editorial "Please be Patient." Every curative and prophylactic biological treatment discovered by the veterinary profession actually decreases our incomes. Think this over. If wrong I wish to be shown wherein I err. In some cases manufacturers of biologics sell direct to the stockman and as far as I am aware most of them sell to the druggist. In order to complete the "freeze out" some of the state agricultural colleges furnish antihog-cholera serum and virus, blackleg vaccine and syringes at a lower price than the practicing veterinarian can buy them. Eliminate tuberculin testing, blackleg vaccination, hog-cholera immunization, work done by the gelder, and the immunization against the various diseases now possible with biologics sold direct to the druggist and stock owner, and what is there left for the veterinary practitioner?

Dean White says "I have never felt alarmed at what the quacks, fakers and their like would do to us as a profession, etc." I would respectfully remind the dean that something or someone has reduced the number of his students to a point where it must be embarrassing, lecturing to rows of empty chairs; and if the above fraternities have nothing to do with it, would he enlighten us as to just where the big leak is to be found.

A subscriber writes "The veterinary profession has made good—Although just now the hand that proffers is being bitten—so let's bind up our wounds and"—offer the other cheek. Dear subscriber, you deserve a seat in heaven but before that happy day arrives for most of us we have got to provide, for our families, food and clothing which will not drop out of the clouds.

It is our legitimate work we are looking for, which although here, is gradually being pirated and legislated to others outside of the profession.

Official Veterinary Salaries are an insult to the veterinary profession and concretely rate with the unskilled laborer. For a brief space of time I worked as a government meat inspector and had the satisfaction of knowing that the man who slaughtered the beeves I inspected drew more pay than I did.

And, I would like to know what effort is being made to promote or protect the financial welfare of the men who work day and night, in mud, rain, and manure, who drive over bad roads and no roads, who pay their bills, and who are trying to make a living as members of the veterinary profession.

Unless the leaders of the profession—the deans, the state veterinarians, the national and state associations wake up and put up a fight for a definite status; unless they stop the sale of biologics other than through the veterinary profession; and refuse to accept the low salaries, they will soon find the class rooms not depleted but empty.

A truthful statement of net monthly profits of each of your subscribers would furnish a thrill greater even than the occasional statements which appear in the journal to the effect if we would only grasp the chicken, pigeon and rabbit practice, all would be well with us.

Finally I can truthfully say, I have always discouraged anyone who inquired of me what prospects the veterinary profession offers. I could not conscientiously do otherwise. It offers none that are worth while.—Ole Virginia.

A CASE OF IMPACTION OF THE CROP DUE TO PARAFFIN

Miguel Manresa, Manilla, Philippine Islands
Professor in the College of Veterinary Science

On November 24, 1923, a valuable fighting cock was brought to the Clinic with the complaint that it had not eaten anything for eight days; had lost considerable weight, and had not been able to empty its crop. The fowl appeared very dull and its comb and wattles were very anemic. Its temperature was normal. The crop was found slightly enlarged and on palpation coarse hard bodies could be felt.

Impaction of the crop was diagnosed, so powdered nux vomica in ten-grain doses twice daily was prescribed. Meanwhile the bird was confined in a cage. The following day it was seen to pass watery feces but its crop was as hard as on the day previous. The treatment was repeated, this time the crop being carefully massaged. On the third day the same treatment failing to effect evacuation, an operation on the crop was performed.

The impacted material was carefully removed and by working into the interior of the crop with the index finger, two pieces of paraffin about the size of the thumb were identified, one being securely wedged in the opening of the crop to the **preventriculus.**

After cleansing the crop with a very weak solution of creolin, the wound was sutured, using double continuous sutures, The after treatment consisted in allowing the cock small quantities of water and soft food given in small amounts at frequent intervals which was continued for three days. On the fourth day the sutures were removed. Condition was very rapidly regained, and the fowl was discharged at the end of ten days a happy red-blooded fighting cock.

FORTY YEARS OF WORK ON ANIMAL PARASITES

The man whose livestock is suffering from parasites probably has little appreciation of the widespread efforts that are being made by scientists to discover, classify, and find means to control these various enemies of animals, some of which spend a part of their life cycles in man. In the United States department of agriculture, where many recent discoveries have been made regarding parasitic worms and their control, a catalog has been prepared of all the available information in the world on this subject. This work, which was begun thirty years ago by Dr. Albert Hassall and Dr. C. W. Stiles, has grown to great proportions and the first of these two scientists has carried it up to the present time.

Practically an entire office room in the department of agriculture is devoted to the card indexes containing the sources of all information on these parasites, the only record of its kind in the world. Scientists in all parts of the world interested in the subject now look upon this office as an exchange at which they can verify discoveries and where they can obtain needed information or be directed to its source. Forty years ago when this work on parasites was beginning there were only a few men who were considered specialists; now there are hundreds making investigations in the fields of veterinary and medical parasitology. At the present time the information on these thousands of known parasites, mostly

worms, is listed on nearly 400,000 cards filed away in 240 drawers. Several years ago a list of published books and articles on parasitology was published in half a dozen volumes, but in recent years several times the number of articles listed in these large books have been added to the list.

The collection of this vast quantity of information on one small branch of science is an indication of the patience and effort put into the solution of problems affecting the livestock producers. In this case medical men also have benefited greatly. These long rows of drawers are not filled with dusty cards, but are used daily to supply information to scientists, veterinarians and farmers. A man finds what he thinks is a new parasite and sends in a description. The records will be searched both under the headings of the parasite itself and of the animals attacked. It may be found to be an organism well known. If it is a new one, it will be properly classified and the information will be available to parasitologists the world over.

Not all the information available has to do with farm animals, though most of it applies to cattle, horses, hogs, sheep, dogs and poultry. Keepers of all sorts of strange beasts in zoological gardens may find here answers to questions concerning the parasites which attack their caged livestock A recent letter from a man in Texas asked for the names of the parasitic worms attacking kangaroos. He got the information he desired. Many investigators write for information contained in books they can not obtain. In such cases it is often possible to photograph the pages containing it and send them at very small cost. Through this extensive catalog it is often possible to detect errors in books published in many countries and to call the attention of the authors to them, an invaluable service to scientists.

The great increase in the study of animal parasites, of which this catalog is concrete evidence, has resulted in progress which has been of great economic and social importance. Lately new methods have been found for combating the hookworm in man, the first results having been obtained with animals by investigators in the department. A system also has been developed for controlling internal parasites in swine. Means have been found for controlling stomach worms in sheep, destroying Texas fever ticks, reducing losses from gapeworms in chickens, and minimizing the danger of trichinosis and tapeworm infection among human beings.

LET GEORGE ANSWER

A secretary of a local association of more than ordinary importance asks why it is so hard to keep up enthusiasm among the members when as he declares, "The work of the association has been a great financial benefit to both the veterinarians and the stockmen of this district and has done wonders in stabilizing prices and standardizing methods of hog vaccination."

We have a theory, but in the interest of personal safety prefer to let George answer.

According to the Department of Commerce, there were 90,452 deaths from tuberculosis in the registration area in the United States in 1922 and 80,938 deaths from cancer. The tuberculosis death rate in 1922 was 97 per 100,000 population, a reduction of 2.4 since 1921. The cancer death rate in 1922 was 86.8 per 100,000, an increase of 2.8 since 1921.

Equestrian Class, 1923, Lombard College, Galesburg, Ill.

Colleges Form Equestrian Classes

The accompanying views show equestrian activities at Lombard College, Galesburg, Ill. The pictures were furnished by Dr. L. F. Brown of Drs. Brown & Turner, veterinarians in that city. Dr. Brown has been successful in having both Lombard College and Knox College add equestrian classes to their regular courses. He states that from the number of students they both have booked for next term, he will be compelled to divide the classes, as he does not have enough horses to accommodate them.

Dr. Brown states further that a large number of private parties have also become enthused over horseback riding and the demand is far beyond his expectations. In fact, he is of the opinion that there was more horseback riding in Galesburg the past year than at any other time during the last twenty years, which indicates that the riding horse is fast coming back, where the field is properly cultivated.

Drs. Brown and Turner are finding the furnishing of horses and giving instruction in riding a very attractive adjunct to their general practice.

Army Correspondence Courses

By Capt. Geo. H. Koon, Associate Editor

To be able to perform the manifold duties pertaining to a specialty like the military service, those engaged or likely to be engaged in those duties must be trained.

It has been stated that only a comparatively small percentage of reserve officers may be trained at the summer training camps. This unfortunate situation, due to lack of proper funds, applies to every branch of the reserve. In an endeavor to give every reserve officer an opportunity to get some training, the War Department has promulgated the Army Correspondence Courses, which have been prepared for each department in the Army, the veterinary course being included with the medical department.

Training in camp is along practical lines; officers are taught and actually do things. Many of the elementary points about being a soldier, and traditions of the Army, almost indispensable if one is to be a successful officer, are only learned from such contact with others as takes place at a camp. There is for instance the physical training; the actual application of the school of the soldier, the squad, the platoon, the company, and the regiment; the care, use, and carrying of personal equipment; marching and march discipline, bivouac, canvas pitching and camping under same; ceremonies and inspections; terrain problems; some instruction with the rifle and pistol; equitation, and the resultant training in the assembly of horse equipment and making the mounted pack. Informal lectures, quizzes and demonstrations covering articles of war, army regulations and orders pertaining to enlisted men, guard duty, military courtesy and customs of the service, uniform regulations, court martials, camp sanitation, and duty in relation to line troops. By this personal contact one gets to know the why and wherefor of things in the military game, learns rules of military discipline, why they are necessary and the value of discipline in active service, and courtesy as applied to military circles and reasons for same. There is something about military life which appeals to most men, and those who attend a training camp cannot help but profit. A correspondence course, however, is mostly theory. Some practical good is received from it, and the theory is as important as the practical part—especially so to those in advanced rank. In a training camp one is given the practice of theory, while in the correspondence course the theory of practice is given, and all reserve officers should pursue the course, whether they have been to a training camp or not.

These correspondence courses are for National Guard officers also, and they should take advantage of this opportunity to learn the administrative part of their military duties.

The Army Correspondence Course for the Medical Department consists of two courses, A and B.

Course A covers Elementary Tactics and Technique.

Course B covers Advanced Tactics and Technique.

Course A is subdivided into six sub-courses and, including examination, takes 178 hours to complete.

Course B consists of but one sub-course of 39 hours.

Course A

The purpose of this basic course is to give the student a knowledge of the duties that will be required of the veterinary officer during his service in the Army. These duties are not necessarily confined to the strictly professional work of a veterinary officer but include the duties that will be required of him as an officer of the Army and particularly as a member of the Medical Department. Therefore, veterinary officers are required to take the same course as medical officers, with the exception that certain lessons will be substituted or deleted in each subcourse, not because they will be called upon to function in the capacity set forth in certain situations, but because they should, as members of the Medical Department, know what is required of their department.

Course A has been subdivided into subcourses or groups of subcourses of 39 hours each, for the reason that 39 hours is the minimum time which the student must devote to these lessons in one year and it is desirable that the minimum yearly task be set apart. Thus the student devoting but one hour per week to the work would finish but one subcourse in a school year, while five hours per week would enable him to finish the entire basic course in one year.

The subcourses are as follows:

Subcourse I. Early Post Duties (39 hours.)

Subcourse II. Post Duties (continued) (39 hours).

Subcourse III. Organization and Tactical Employment of Line Troops (39 hours).

Subcourse IV. Service with the Medical Regiment (39 hours).

Subcourse V. Hospitalization (17 hours).

Subcourse VI. Sanitary Devices; First Aid; Military Law (22 hours).

The course is presented in a form dealing with special situations and problems which confront the medical (and veterinary) officer. Every effort has been made to have the first subcourse cover the duties which are most apt to confront the officer during his first month of service, but it has not been practicable to so arrange all subcourses in this chronological order or sequence of tasks. The first subcourse consists of 36 lessons and examination, and covers the very basic duties of an officer. Six lessons in this course have been deleted for veterinary officers and substitutions made dealing more strictly with the veterinary service.

The second subcourse presents for the student's consideration some of the more important additional duties that are required of medical department officers serving with troops in a garrison or post. It is designed to teach him how to procure and to account for the Government property necessary in the performance of his duties; how to accomplish the routine administrative matters required of a detachment commander; how post exchange councils and councils of administration are conducted; how to institute measures for the control of outbreaks of infectious and communicable diseases, and how to examine the water, milk and food supplied to the command. This subcourse consists of 34 lessons and examination. However, there are 9 lessons that veterinary officers are not required to take and no substitutions made, and certain portions of the examination are omitted.

It is essential that all veterinary officers have a knowledge of the tactical employment of line troops in order to understand the part they must play while serving in combat with these troops. Therefore, subcourse three presents for the student's consideration the organization of the units of the line; their power; limitations; tactical employment and the tactical employment of the veterinary units attached to line organizations.

As a knowledge of and familiarity with maps plays a most important part in the proper education of an officer, six hours' work in subcourse three has been devoted to this important subject. It is believed that this will give the student a knowledge of map reading sufficient to enable him to obtain a fairly clear picture of the ground covered by the map. He will be required to use this knowledge in the solution of the problems appearing in this and other subcourses. This subcourse consists of 30 lessons and examination, and veterinary officers are required to take all the lessons, including the examination.

Subcourse four deals with the organization, administration, equipment and tactical employment of the medical regiment. (The Veterinary Company, replacing the war-time "Veterinary Mobile Section", is a component of the Medical Regiment). In addition, it is designed to give the student a knowledge of tent pitching, care of animals, care of motor transportation, the conduct of motor convoys, and the disposition of medical troops on the march.

In view of the fact that the commanding officer of the medical regiment is the technical adviser of the division commander in regard to conditions affecting the health of the troops, lessons on the hygiene of the march, the selection of camp sites, the hygiene of billets, trenches and battlefields have been included in this subcourse. It consists of 29 lessons and examination. Veterinary officers omit 8 lessons, but take the examination.

The fifth subcourse, dealing with the administration of hospitals, hospital ships and hospital trains, has been entirely deleted for veterinary officers and in its place a subcourse five substituted the purpose of which is to familiarize veterinary officers of the National Guard and Reserve Corps with their duties as integral parts of the Medical Department of the Army, when called into active service. It is the aim of this course to acquaint veterinary officers with the regulations, reports and their general duties, their relation to other officers of the Army in a military and professional way and to point out to them the everyday problems which they may be called upon to solve. This veterinary subcourse five consists of 15 lessons and examination, and covers Veterinary Station Service, General; Veterinary Station Service, Animals; Veterinary Station Service, Meat and Dairy Hygiene; Operation of Veterinary Hospitals; Service of Veterinary Hospitals; Register and Report of Sick and Wounded Animals; Veterinary Statistical Reports; Communicable Diseases of Animals; Veterinary Sanitation; Veterinary Dairy Inspections; Vet-

erinary Meat and Dairy Hygiene Record and Report; Veterinary Health Certificate and Memorandum; Veterinary Forage Inspection; Veterinary Service Remount Purchasing and Breeding Headquarters and Purchasing Boards, and Veterinary Laboratory Service.

Subcourse six deals with the subjects of sanitary devices, first-aid, and military law. These subjects are grouped together in this subcourse not because of their inter-relationships but because they are essential subjects for the basic course and could not be included elsewhere without interrupting the unity of the subcourse. Veterinary officers will take all the lessons and the examination.

Each lesson in all of the subcourses consists of a text to be read, such as army regulations or other texts; reference to collateral reading; materials required to carry on the lesson, such as blanks, etc.; and ending with a given situation and a required solution. Generally, the student is asked to study carefully the lesson assigned and solve the problem insofar as possible from his knowledge of the subject, using the text only as an aid in some of the details which he cannot remember. The solution of the situation given in each lesson is sent to the proper Corps Area Headquarters. The examination at the end of each subcourse is to be written without reference to books, memoranda or other sources of information.

As previously stated, for promotion to the grade of Lieutenant Colonel, an examination, the scope of which will be prescribed by the Surgeon General, will be given to demonstrate the applicant's capacity to perform the duties and assume the responsibilities of the grade and class of service sought. For all other grades, no examination other than physical will be required when, in the opinion of the board, the civil or military experience of the candidate justifies belief in his qualifications for the grade and class of service sought. Needless to state if the candidate for promotion has satisfactorily pursued the Army Correspondence Course it will have great weight in determining the extent of his military experience.

Some of the regulations, pamphlets, blank forms, etc., necessary to carry on the work are furnished, while others, usually those mentioned as collateral reading, have to be purchased. For the most part these are Government documents and may be purchased from the Government printing office for a few cents each. Full instructions accompany each lesson.

Course B

This consists of but one subcourse of 21 lessons and an examination, veterinary officers taking the complete course. Intended for officers of advanced rank, or those about to be promoted to field grade. This course covering advanced tactics and technique, is designed to give to the officers of the medical department, who may be called upon to function in the higher administrative and technical capacities, a knowledge of some of the duties that will be required of them. No attempt has been made to present even a major portion of the multifarious duties that they may be called upon to perform, but an effort has been made to present to them some of the more important ones.

The 21 lessons cover the following subjects: (1) Logistics, the term given to that branch of military art which has to do with the supply and movement of armies (the term "logistics" therefore embraces all of the activities which could in any way fall under the heading "Equipment and Transportation"); (2) Supply, considering the subject from all and the very broadest angles which relate to the military service, such as raw materials, manufacturing and shipping facilities, storage and distribution, and the relation of military supplies to the needs of the civil population; (3) Commercial Law, general provisions of contracts, negotiable instruments; (4) Construction and Repair of Hospitals; (5) Rules of Land Warfare; (6) Calculation of Rates; (7) Duties of a Division, Corps and Army Sanitary Inspector; (8) Doctrines, Principles and Methods (there is a definite doctrine of war based upon certain immutable principles which will govern the conduct of all military operations. Various methods are employed in applying these principles. All doctrines, principles and methods of training are based upon the doctrines and principles of war.); (9) Organization of the General Staff; (10) Organization of the Theater of Operations; (11) Organization of the Sanitary Service in the Field, the Army, the Corps, the Division; (12) Estimate of the Situation and Plan of Evacuation, Hospitalization and Supply; (13) Casualties and Casualty Estimates; and (14) the Evacuation Hospital.

It is a privilege and an honor to wear the uniform, and each officer should care for and wear it with this thought in mind. It ought to be superfluous to state that officers are expected to be a model of neatness, thus setting the proper example for enlisted men. There should be but one way of distinguishing a veterinary officer from one of any other branch properly dressed, and that is by his collar insignia. The

duties of members of the veterinary service do not constitute a license to disregard the standards.

It is suggested that each Reserve and National Guard officer secure a copy of Army Regulations 600-40, Wearing of the Uniform, which may be bought from the Government Printing Office, Washington, D. C., at a nominal cost.

It is also suggested that those who have to purchase uniforms write to Sigmund Eisner, Red Bank, N. J., for samples, measurement blanks, and prices. Uniforms secured from Eisner are according to official specifications, well made and cost about one-third less than those secured from other sources.

Training for Reserve Officers

There are three definite means whereby reserve officers may receive training; attendance at summer training camps, Army correspondence courses, and collateral reading or self study.

To date no definite programs of instruction for veterinary reserve corps officers at training camps have been worked out. The few veterinary reserve officers who have attended these camps have been given instruction of a kind, and there have been expressions of approval of the work received. However, before another training period it is hoped to have definite training programs uniformly followed at all training camps. It appears highly desirable that when veterinary reserve officers attend training camps there should be provision for giving them a uniform course of instruction in the subjects which they are particularly interested in as a means of creating and holding their interest and enthusiasm upon the subject of the reserve, its purposes and training. Of necessity, however, schedules must comprehensively embrace those subjects which veterinary officers must be conversant with in order that they may be developed into well balanced officers, and not all reserve officers will take to every subject taught. In other words the training cannot be just as each individual thinks it should be, but the schedules will be prepared with a view to pleasing as many as possible and at the same time adhere to a course of training deemed essential by the War Department.

Courses of instruction for reserve officers should be graduated. Those who come to camp for the first time need to know the rudiments of military organization. When first attending camps they do not know what it is all about. The subjects of military organization, discipline, methods, usages of the service, and conditions of military life might well constitute the first part of the course. The second part may well constitute the instruction in military field sanitation and hygiene of animals. The third part may treat of the tactical use of veterinary troops and organizations.

In view of the limited Congressional appropriation only a comparatively small percentage of reserve officers may be trained at the summer training camp. All, however, should take up the Army Correspondence work. A full description of the course for veterinary officers will be given in next month's article. In the meantime it is suggested that each veterinary reserve officer write to his Corps Area headquarters for information concerning the Army Correspondence Course, and make application to pursue same.

EXPERIENCES OF A VETERINARY RESERVE OFFICER AT CAMP

I was commissioned first lieutenant and assigned to the 110th Hospital Company, Va. N. G., and also first lieutenant, M. A., O. R. C. I attended camp last August with my company, and had the novelty of commanding my company on the homeward trip. It is seldom a veterinarian will command a combat outfit. I am adjutant to the company and in addition perform such veterinary duties as may be necessary. I have served in this company under two commanders, first enlisting as a private, holding all grades as a non-commissioned officer. My former experiences as a non-com. are of great benefit to me now in my duties as adjutant.

Danville, Va. G. A. Ferguson.

INSPECT INDIANA VETERINARY COMPANY

Major Larry B. McAfee, M. C., DOL (MB), medical instructor, Indiana national guard accompanied by Colonel John J. Boaz, M. C., I. N. G., commanding officer, 113th Medical Regiment, Major Frank J. Muecke, V. C., division veterinarian, 38th Division and Sergeant William T. Hanlon, DEML, sergeant instructor, 113th Medical Regiment made a visit of instruction to Veterinary Company, 113th, 113th Medical Regiment, Indiana national guard November 21, 1923.

The company was formed for inspection and presented a very soldierly appearance.

After inspection brief talks were given to the organization by the visiting officers.

The entire organization showed marked in-

terest in their work and seemed cognizant of the fact that they were members of a unit that might be called upon for active service should the emergency arise.

The commanding officer, Vet. Co., 113th, Captain Lloyd M. Friedline, V. C., stated that he was endeavoring to remodel the interior of the armory in order that better amusement facilities could be afforded the organization. In this connection members of the company with the assistance of few interested civilians have produced a musical comedy, to be given at the local theatre in order to raise funds for this purpose.

Pertinent Information for Reserve Officers

By Capt. Geo. H. Koon, Associate Editor

Admnistration: General knowledge of regulations applicable to the officer as an individual; channels of correspondence; care and use of government property.

Customs of the Service, courtesy, and military discipline: An understanding of the most essential customs of the service; the courtesy expected of all officers; the purpose of discipline and means by which maintained.

Military hygiene: General knowledge of personal hygiene in the field and the conservation of the health of individuals and groups.

Practical efficiency: Demonstrated or estimated ability to put to practical use, in the capacity for which appointed, the knowledge possessed.

Pay. A reserve officer when on active duty receives the same pay and allowances as an officer of the regular army of the same grade and length of active service and mileage from his home to his first station and from his last station to his home, but does not receive retirement on retired pay. Pay status begins on the date that an officer officially complies with the order calling him to active duty and ends when he is relieved from active duty. In time of peace an officer relieved from active duty is entitled to pay during the actual time required to travel from last station to his home, to be computed the shortest usually traveled route.

Assignment. It has been stated that appointment as a reserve officer is not, in any case, to be the mere conferring of a rank, but is made to fill an office in which service may be rendered. Appointments are not honorary or rewards for past service, but are based primarily upon the qualifications of the appointee to perform satisfactorily the duties of a particular office.

So far as practicable, it is contemplated that a mobilization of the Army be one of organizations rather than individuals, and the numbers allotted to World War divisions are being perpetuated. To accomplish this and to have all reserve officers understand and be prepared for their specific duties in an emergency, all reserve officers will, so far as practicable, be given specific assignments in time of peace.

For administrative control each reserve officer is under the jurisdiction of the commander of the department or corps area in which his permanent residence is located. For training or assignment, or both, most, though not all, reserve officers are placed under the jurisdiction of department or corps area commanders. The term assignment, as used in reference to reserve officers, refers to an assignment or designation for a class of duty, or a specific duty for which it is contemplated to use the officer in time of emergency and for which it is contemplated he be trained in time of peace.

As a basis upon which to make suitable assignments, the War Department records of each reserve officer are carefully examined by the Chief of the branch in which the officer is appointed. The data having a bearing upon the qualifications, suitability, and preference for assignment is placed upon a form suitable for ready use and, except for a few officers retained for assignment by the War Department or branches thereof, the form bearing the assignment data is sent to the department or corps area commander by whom the officer is to be assigned. Reserve officers may be assigned or attached to all components of the Army of the United States. Assignments to the Regular Army will be made only as specifically directed by the War Department. All reserve officers, who are also members of the National Guard, will be considered as on duty with that component of the Army and will be given no other assignment as reserve officers. The assignment of other reserve officers to the National Guard will be made only when authorized by the War Department.

In making assignments, due consideration is given to general and special qualifications, limitations as to the kind of duty for which appointed or suited, place of residence and local

affiliations, and the preferences of the officers. So far as practicable, all reserve officers will be assigned to units nearest to their places of residence. World War veterans, who desire, may be assigned to their reconstituted former war organizations, in the discretion of department and corps area commanders, provided such assignment is within the department or corps area.

The re-assignment of any reserve officer who makes a permanent change of residence will be considered, with a view to making the assignment correspond geographically with the new permanent residence.

Reassignments will be made when additional data bearing upon qualifications, changes of preference, or other factors indicate the desirability of reassignment in accordance with the general plan of having each officer assigned to a duty for which qualified.

Reserve officers desiring a change of assignment should correspond with the commander of the department or corps area in which they reside. Inasmuch as reservists are under those officers for administrative purposes, all correspondence should be so addressed.

For purposes of assignment reserve officers are divided into three groups:

(1) General Assignment Group. The officers in this group are selected by the War Department and are for assignment to special duties and activities which, in time of peace or war, are not included in the jurisdiction of chiefs of branches. They are known as the General Assignment Group. The Adjutant General notifies each officer of his assignment to the General Assignment Group.

(2) Branch Assignment Group. The officers of this group are selected by the chiefs of branches and are for assignment by those chiefs to special duties and activities. They are known as the Branch Assignment Group. The Chief of the branch notifies each officer of the Branch Assignment Group pertaining to his branch (the Surgeon General in case of veterinarians) through the department or corps area commander of his assignment.

(3) Territorial Assignment Group. All reserve officers not in the General Assignment Group or Branch Assignment Group are known as Territorial Assignment Group. Such officers are available for assignment by department or corps area commanders to any organizations or activities within their territory, not exempted from their control by specific orders of the War Department, and are notified of their assignment by those commanders.

While much of what has been written in this article has appeared at different times in War Department literature, it was believed this information, made available in this form, would prove of interest. Not all of the officers in the veterinary section of the Officer's Reserve Corps, nor in the National Guard, have had access to this information. Hereafter any changes in the appointment or promotion policy will be given in order to keep all concerned advised.

Several times since the War, and particularly since 1920, the advisability of readopting the blue dress uniform has been discussed, also as to whether or not certain suggested changes in the service uniform should be made. Regular Army officers were required to answer a questionnaire dealing with the subject, but decision as to readoption of the blue dress or material change in the service uniform (confined principally to change from the standing collar to a turn-down collar with lapels) was postponed for a couple of years on account of the expense involved The subject will undoubtedly come up again. In the meantime the troops in and around Washington gradually adopted the practice of shining their collar and cap insignia and buttons, resulting finally in the adoption of the idea for the Army.

Advance information of prospective changes in the Army uniform regulations (AR 600-35) became available this week. Special emphasis is imparted to the fact that Army officers—regular, National Guard and reserve—will not adopt any of the changes in contemplation until the receipt of printed official orders from the War Department.

The service breeches are to be cut snug at the waist, top to be about two inches above the hip-bones, full in the seat and loose in the thigh, with sufficient length from waist to knee to permit wearer to assume a squatting position without binding at the seat or knee; breeches to present the appearance of fullness when standing; to be cut tight for about three inches immediately below the knee. In the case of commissioned officers, the use of a strapping of buckskin of color approximately similar to the material of the breeches is also authorized; the lacing on the front of the legs to be inside the shin-bone.

Definite tailoring specifications are given for the service coat. Metal hooks are to be placed at the waistline for the support of the belt. The collar not to exceed two inches in height. When the white collar is worn it will show not to exceed one-fourth of an inch and will be attached to the collar of the coat by clasps or studs. For commissioned officers only, the two lower outside pockets will be made with large inside hung pockets, the opening of these pockets to be under the flap and just above the mouth of the patch pockets.

All insignia, including buttons, will be of gold, gilt or gildine metal polished. Bronze buttons now on hand may be continued in use as long as serviceable, provided the bronze finish is removed and the metal polished.

The collar insignia for officers of the Veterinary Corps will be the gold, gilt or gildine caduceus with a bronze finished "V" superimposed.

It is announced that whenever changes in design or material of uniforms are published in Army Regulations 600-35, all members of the Army are authorized to wear out existing clothing. New uniforms procured or manufactured under promulgation of the changes, will be of the new type. Reserve officers and officers of the National Guard will wear the same insignia as officers of the regular Army.

Necessary uniforms, if in stock, accouterments, and equipment may be purchased by reserve officers when on active duty, after proper identification, at the same price and under the same rules and regulations as govern such sales to officers of the Regular Army. Necessary uniforms, accouterments, and equipment may be purchased, after proper identification, by reserve officers not on active duty in such quantities as would be required immediately by them when called into active service. Reserve officers not on active duty, who reside near a depot sales store or other point of supply, may, upon identification, make purchases in person. Those who do not reside near a depot sales store or other point of supply may submit written requests for purchases. Information concerning cost of articles, packing, etc., can be obtained from department or corps area headquarters, military stations, or from officers in charge of depot sales stores or other points of supply.

Subsistence stores, when available, will be sold by Quartermaster Department at cost price, for cash, in reasonable quantities to officers of the Officer's Reserve Corps while on active duty and to their dependents during their absence upon written authorization to the quartermaster. Sales will be made to the foregoing only after proper identification and on his or her certificate that the stores are for his or her personal or family use.

Regulations provide that reserve officers, when called to active duty, are entitled to the privilege of obtaining, on memorandum receipt, all necessary arms and equipment except necessary clothing.

All reserve officers must answer official communications promptly, and in replying to or forwarding original communications great care must be exercised to see that their full name, grade, and section are legibly stated. Correspondence will be conducted as prescribed in Army Regulations. Except when otherwise authorized, all official communications intended for the Secretary of War or for any bureau or office of the War Department will be in writing and addressed to The Adjutant General of the Army.

Lists of War Department documents and War Department pamphlets on military training, with the regulations governing distribution, are published by The Adjutant General of the Army. Economy demands that the supply of publications to individual reserve officers be limited to those cases in which publications furnished the organizations to which they are assigned are not available for their use. In general, publications are supplied to individuals only on the request of the individual. Officers desiring to purchase War Department books and publications may obtain them from the Superintendent of Documents, Washington, D. C.

As the subject of training is being covered in these articles, reference will be made to the particular pamphlets, circulars, bulletins, Army Regulations, etc., it is believed essential that each veterinary officer should have.

ADDITIONAL RESERVE OFFICERS

Lt. Colonel

Staley, Raymon Maxwell
P. O. Box 1404, Philadelphia, Pa.

Majors

Lentz, John Beckley
3 Dana Street, Amherst, Mass.

Pulsifer, Walter Clyde
Woodstock, Vermont

Snook, James Howard
349 W. 10th Avenue, Columbus, Ohio.

Wills, John Gordon
27 Matilda Street, Albany, N. Y.

Captains

Fawver, J. Roy
Box 174, Lansing, Ill.

Grossman, James D.
College of Vet. Medicine, Ohio State Univ.

Jensen, Walter Daniel
Taylor, Nebraska.

Likely, Charles Wm.
Box 276, Ankeny, Iowa.

Melchiorsen, Wm. Geo.
Route No. 5, South Omaha, Nebr.

Rebrassier, Russell Edmund
2348 East Avenue, Columbus, Ohio.

Roseboom, Archie Andrew
800 Kickapoo Street, Hiawatha, Kans.

Speer, Fred
2346 East Avenue, Columbus, Ohio.

Yost, Hursh Reginald
Somerset, Ohio.

1st Lieutenants

Cleaver, Fred Everett
20 E. Main Street, Avon, New York.

Gilmore, Richard Calvin
Ulysses, Nebraska.

Purdy, Daniel Milton
942 S. Water Street, Wichita, Kans.

Stafseth, Henrik Joakim
630 Sunset Lane, East Lansing, Mich.

2nd Lieutenants

Ball, Leroy C.
Titonka, Iowa.

Blubaugh, Gustin M.
R.R. No. 9, Lebanon, Ind.

Cass, Peter John
80 West Lincoln Ave., Oshkosh, Wis.

Dodd, Walter E.
P. O. Box 809, Boise, Idaho.

Foley, Timothy Joseph
Chapman, Kansas.

Fretz, Victor Clyde
707 W. Market Street, Bluffton, Ind.

Marquardt, Emmett Hugo
1615 W. Locust St., Bloomington, Ill.

Meyer, Alfred Wm.
350 Lafayette Street, New York, N. Y.

Schwamm, George
2555 Bedford Avenue, Brooklyn, N. Y.

Sears, Kirtley
King City, Missouri.

Turner, Amos Alfred
119 S. Monroe Street, Streator, Ill.

Wirt, Fred Garfield
200 St. Phillip St., Thibodaux, La.

CREOLYPTOL:

The supreme Guiacol. Beechwood-Creosote Eucalyptus Compound. Makes pink emulsion. No separation. Always perfect. Especially indicated in the treatment of Flu in swine. Recommended for the treatment of Distemper, Catarrhal Fever, Influenza, etc., in swine.

Many veterinarians prepare an aqueous cough mixture, employing 1 to 2 ounces Creolyptol to the pint.

Price 1 to 4 gals., $6.00 per gal.; 5 to 10 gals, $5.40 per gal.

CAMPHOLIC:

The excellent internal and external, non-toxic, non-caustic Antiseptic, Aseptic and Deodorant. Makes a perfect white emulsion, no separation.

Recommended in flatulent and spasmodic colics, also bloating in cows.

In its usual strength is much stronger as an Antiseptic than many of the familiar Antiseptics.

Price 1 to 4 gals., $3.25 per gal.
5 to 10 gals., $3.00 per gal.

Note—If your supply house cannot furnish, write us direct. Please give name of your nearest supply house.

Prepared at Laboratories of

ACME CHEMICAL COMPANY

2336 Clybourn St.
MILWAUKEE, WIS.

CHANGES IN STATUS OF RESERVE OFFICERS

Assignments:

1st Lieut. Wm. Gustav Keehn, Vet-ORC, 511 New Nelson Bldg., Kansas City, Missouri, assigned to Vet. Station Hospital No. 2, for duty on Professional Service, pursuant to par. 121 (b), SR No. 43, W.D., dated Jan. 2, 1924.

Marsh, Hadleigh, Captain, Vet-ORC, Montana Livestock Sanitary Board, Helena, Montana, assigned to 104th Division, U. S. Army.

McCrillis, John Joseph, 2nd Lieut., Vet-ORC, Douglas, Wyoming, assigned to 104th Division, U. S. Army.

Ruehle, Otto, Jr., 2nd Lieut., Vet-ORC, assigned to Train Headquarters, 19th Corps, U. S. Army.

Pletsch, Albert B., 2nd Lieut., Vet-ORC, McNabb, Illinois, assigned to Veterinary Evacuation Hospital No. 6 in Professional Service.

Muldoon, William Edward, Major, Vet-ORC, former address 1409 Anderson Avenue, Manhattan, Kansas, assignment to Veterinary Station Hospital No. 5 as commanding officer, revoked.

Promotions:

Kuttler, Abner K., Vet-ORC, Fort Worth, Texas, promoted from 1st Lieut. to Captain, effective October 5, 1923.

Traylor, James T., Vet-ORC, Harlingen, Texas, promoted from 1st Lieut. to Captain, effective September 18, 1923.

Button, Otis G., Vet-ORC, Tacoma, Washington, promoted from 2nd Lieut. to 1st Lieutenant, effective October 2, 1923.

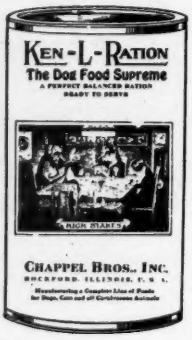
Ward, Thomas V., Vet-ORC, Baltimore, Maryland, promoted from 2nd Lieut. to 1st Lieut., effective September 20, 1923.

CHANGES RELATIVE TO VETERINARY OFFICERS REGULAR ARMY

1st Lieut. Raymond Randall has been relieved from duty at the Army Medical School, veterinary laboratory section, and reported for duty at Letterman General Hospital, Presidio of San Francisco, Calif., December 26, 1923.

Lt. Colonel R. Vans Agnew, on detached service to Australia, November 20, 1923, for purpose of purchasing and shipping polo ponies to the Philippine Department.

1st Lieut. Claude F. Cox, V. C., is relieved from General Intermediate Depot, Fort Mason, California, effective at proper time, and directed



Ken-L-Ration

and

Hemo-Ration

Solve the Ration Problem of the Small Animal Hospital and Kennel

Veterinarians have been hoping someone would bring out a MEAT FOOD that their ailing dogs would eat. Ailing dogs will eat

Ken-L-Ration

a meat, cereal and cod-liver oil product, when they will not eat anything else.

Hemo-Ration

is a blood, cereal and cod-liver oil product, many prominent veterinarians consider a WONDER-FOOD in treating chorea and rickets.

For bitches in whelp, for anemic subjects, for convalescents, and as the growing ration for puppies it is invaluable.

Packed in Cans. Keeps Indefinitely.
Send for pound sample and Illustrated Booklet.

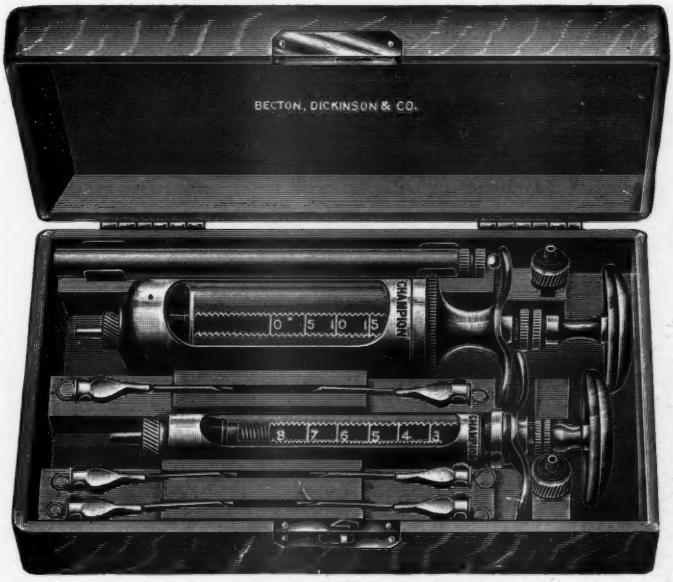
Chappel Bros., Inc. **Rockford, Illinois**

B-D PRODUCTS

Made for the Profession

CHAMPION

Vaccinating Outfit for the Simultaneous
Administration of Serum and Virus



W-505-40-8T

The New Champion Vaccinating Outfits are Adapted
To Either One or Two Hand Manipulation

SEND FOR OUR VETERINARY CATALOGUE

SUPPLIED THROUGH DEALERS

BECTON, DICKINSON & CO.

RUTHERFORD, N. J.

Makers of B-D Veterinary Thermometers, Champion Syringes and Needles,
Monarch Milking Tubes and B-D Cattle Specialties.

A Food For Undernourished Dogs

MILLER'S A-1 BISCUIT
"Battle Creek Health Food For Dogs"
Veterinarians can find no better food for dogs suffering from Malnutrition, Eczema, Rickets and Distemper. Millers A-1 Biscuit contains all the vital body and bone building elements, that will build strong and robust dogs.

MILLER'S A-1 KIBBLED BISCUIT
(Broken Biscuit)

MILLER'S A-1 PUPPY MEAL
(A granular for young puppies)

MILLER'S A-1 RATION
(A cereal meat food in granular form)

Packed in
2-5 Lb.
Cartons

25-50-100 Lb.
Burlap Sacks

SOLD BY DEALERS EVERYWHERE
Ask your dealer for Miller's A-1 Products and insist upon it, if he cannot supply you send us dealer's name and we will send you free trial package.

VETERINARIANS, WRITE FOR SPECIAL PRICES AND SAMPLES

BATTLE CREEK DOG FOOD COMPANY
Dept. V 272, Battle Creek, Mich.

to sail on transport scheduled to leave San Francisco on or about Feb. 19, 1924, reporting to commanding General, Philippine Department for duty.

Seeley, Burton A., V. C., Fort Bliss, Texas, promoted from Captain to Major, effective November 27, 1923.

Lt. Colonel Ray J. Stanclift, V. C., and 1st Lieut. Francois H. K. Reynolds, V. C., Fort Sam Houston, Texas, were detailed on temporary duty at Fort Bliss, Texas, November 22 to November 28, for the purpose of investigating an outbreak of anthrax.

1st Lieutenant Gardiner B. Jones, V. C., arrived at San Francisco November 20, 1923, from tour of duty in the Philippine Department. He has been ordered to report to the Corps Area Commander, 8th Corps Area for duty upon the expiration of any leave that may be granted him.

TWENTY-SIXTH ANNUAL MEETING OF NEBRASKA ASSOCIATION

True to tradition the annual meeting of the Nebraska State Veterinary Medical Association was well attended and was much appreciated by all, both from educational and social standpoints.

The twenty-sixth annual meeting of the association held at Grand Island on Tuseday and Wednesday, December 11 and 12 was unique in that it was the first convention to be held in the new fireproof Hotel Yancey just completed, of which the citizenry of Grand Island is justly proud. The building with all its modern conveniences contributed in a large measure to the success of the meeting.

The morning session of the first day was called to order by the president Dr. D. W. Hurst of Tecumseh, who following roll call by the Secretary introduced Hon. T. W. Ellsberry, Mayor of Grand Island who gave the address of welcome which was responded to by Dr. J. S. Anderson of Lincoln.

The president's address was the next in order and a great many valuable points were alluded to by Dr. Hurst which will long be remembered by those present.

The first subject on the program was a paper by Dr. G. A. Young of Syracuse "Dosage, Method of Administration and Toxicology Of Oil of Chenopodium" this pertaining more particularly to swine. The paper was well written and presented, giving rise to much discussion which lasted until noon, when recess was taken until 1:00 P. M. the meeting to convene

at the Blain Horse Pavilion for a clinical session.

The clinic was above the average judging from the interest manifest in the various demonstrations consisting of the following:

Spaying of Young Calves, Dr. L. V. Skidmore, Lincoln.

Round Worms in Swine (lecture and demonstration) Dr. H. B. Raffensperger, Chicago.

Nasal Polypus Operation in Horse, Dr. J. S. Anderson, Lincoln.

Ridgling Castration, Dr. H. E. Bemis, Ames, Iowa.

Poultry Judging and Medication, Dr. C. E. Ackerman, Wilber.

Restraint, Dr. L. V. Lewman, Big Springs.

The clinic was in charge of Dr. A. A. Anderson, assisted by Drs. McGinnis, Foster and Rose.

The Annual Banquet at 6:30 P. M. in the Hotel Yancey was the social feature of the session, as it always is at Nebraskan meetings and if there are any out of state veterinarians who doubt the ability of our practitioners to enjoy themselves they are cordially invited to come and see things at first hand as did Dr. Conrad of Sabetha, Kansas whose arrival was a pleasant surprise.

While partaking of the well prepared banquet, music was furnished by a specially selected portion of the famous Des Dunes Band of Omaha and the Y. M. C. A. Glee Club of Grand Island whose pleasing numbers were much enjoyed. The speakers of the evening following the banquet were Mr. G. W. Cowden, President of the local Chamber of Commerce who extended a welcome to the visiting members, their wives and friends. Response was given by Dr. W. T. Spencer of Lincoln. Short talks were given by Mr. W. I. Blaine of Grand Island, Dr. H. E. Bemis of Ames, Ia., Dr. R. C. Moore of St. Joseph, Mo., and Dr. D. W. Hurst, President of the Association.

Dr. L. Van Es of Lincoln having established his reputation as toast master at the 1922 banquet was again called upon to act in like capacity this year which he kindly consented to do and was true to form.

Dancing followed the speaking at 9:30 o'clock lasting until 1:30 A. M., to music furnished by Powel's Orchestra which completed an evening of perfect enjoyment.

At the morning session of the second day following reports of the secretary-treasurer and of the various standing committees the names of

To the Veterinary Profession Only

TENALINE

THE SPECIFIC CANINE TENIACIDE
QUICK — SAFE — EFFECTIVE

Kills and expels Tapeworm 20 minutes after administration.

Repeat orders and new clients testify to the efficacy of Tenaline

Does your case contain this efficient, non-toxic canine treatment?

You cannot afford to experiment with doubtful drugs

DO NOT JUDGE TENALINE BY THE LOW COST PRICE

Price: $1.60 per bottle, cash with order
Manufacturer: WILLOWS FRANCIS BUTLER & THOMPSON, LTD., London, England

Sole Agents America and Canada

R. Vickers, The Plains, Va.

Globe Serum

Concentrated
Clear
Regular

Blackleg Aggressin
and
Veterinary Biologics
of
Unsurpassed
Dependability

Produced Under
U. S. Veterinary License 158
By

Globe Laboratories
Fort Worth, Texas

Branch Offices and Distributors:

Globe Serum Co., Sioux City, Ia.
Globe Serum Co., Cedar Rapids, Ia.
Globe Serum Co., Indianapolis, Ind.
Globe Serum Co., Peoria, Ill.
Globe Serum Co., Lincoln, Nebr.
Globe Serum Co., Denver, Colo.
Globe Serum Co., El Paso, Tex.
Barber & Cochran, Oklahoma City, Okla.
Brashier Bros., Jackson, Miss.
Burris & Mays, Shreveport, La.
Thatcher Serum Co., Riverside, Calif.
Southeastern Laboratories, Atlanta, Ga.

eleven applicants for membership were read, voted on and accepted.

Dr. I. Van Es next presented his subject "New Points on Tuberculosis" bringing out many interesting facts to which he has been giving much attention during the past year.

The out of State guest this year was Dr. H. E. Bemis of the Department of Veterinary Surgery of the Iowa State College at Ames, Iowa, and to Dr. Bemis is given much credit for making the meeting a success. His subject illustrated by lantern slides "Surgery of the Head of the Horse and Ox" was intensely interesting and conveyed many practical ideas to the veterinarians in attendance.

The election of officers resulted as follows: Dr. W. J. Moslander of Grand Island, President; Dr. H. E. Foster of Kearney, Vice President and Dr. F. R. Woodring of Lincoln was reelected Secretary-treasurer for the coming year.

Papers presented during the afternoon session were as follows:

"General Cattle Practice", Dr. P. Phillipson, Holbrook.

"The Viewpoint Of The Breeder and Feeder On Swine Sanitation and Observation of Its Value In Nebraska", Prof. M. B. Posson, Univ. Nebr., Lincoln.

"Points Of Interest To Veterinarians", Dr. L. R. Cantwell, Chief Nebr. B. A. I.

"Differentiation Of Diseases In Dogs Resembling Distemper", Dr. F. Perrin, Lincoln.

"Practical Poultry Pointers", Dr. C. E. Ackerman, Wilber.

"Observations Of Some Of Nebraska's Poisonous Plants", Dr. J. M. Simpson, Alliance.

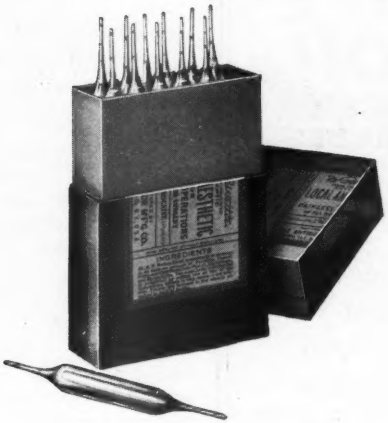
"The Ox Warble", Dr. H. M. Martin, Lincoln.

"Veterinary Corps Of The National Guard", Dr. C. J. Norden, Lincoln.

Dr. Norden next explained a plan for a publicity campaign to be carried on by the Association for the coming year which met the approval of those present and a decision was made to enter into it. The purpose of the campaign is to let the public know something about what the profession stands for and is accomplishing.

Through the courtesy of the Chamber of Commerce and the local veterinarians and their wives, the visiting ladies were entertained. Luncheons, theatre parties and trips to points of interest about Grand Island made up a very enjoyable program for the ladies.

At 5:00 P. M. there being no further business the meeting adjourned, thus ending one more



Waite's
ANTISEPTIC
LOCAL ANAESTHETIC
(2% Procaine or 1% Cocaine)
In Ampules!

Ortho and Para - Mono - Iodo - Phenol forms the remarkable base of Waite's Antiseptic Local Anaesthetic and is a large factor in producing the rapid, lasting anaesthesia for which Waite's Anaesthetic has become famous.

Ortho and Para - Mono - Iodo - Phenol is in itself an effective anaesthetic—and to its high stability and healing qualities may be accredited much of the professional preference for Waite's the world over.

$1.00 Box of Ampules for 25c

To introduce Waite's Antiseptic Local Anaesthetic—In Ampules, we will send you, once only, a $1.00 box of ampules on receipt of your professional card or letterhead and 25c—or if you prefer, a free sample for your professional card or letterhead only.

For sale by all physicians and veterinary supply houses and every dental depot in the world.

The Antidolor Mfg. Co.
77 Main Street
Springville, Erie County, New York
Fort Erie, Ont. Paris, France

Check, Sign and Mail this Coupon

The Antidolor Mfg. Co., 77
Springville, N. Y., U. S. A.

☐ Enclosed find my professional card or letterhead and 25c for which send me $1.00 package of Waite's Antiseptic Local Anaesthetic, In Ampules.

☐ Enclosed find my professional card or letterhead for which send me free sample of Waite's Antiseptic Local Anaesthetic, In Ampules.

Name .....

Address .....

LATHROP
U.S. VETERINARY LICENSE No 102
ANTI-HOG CHOLERA SERUM

Made in the country—where the environment and surroundings are pure—free from all possible contaminating influences.

An exclusive product which should interest the veterinarian who "looks into and thinks of the future as well as the present."

Correspondence solicited from qualified veterinarians.

Lathrop Serum Co.
Lathrop, Mo.

of the Nebraska Association's successful meetings.

Lincoln, Nebr. F. R. Woodring, Secretary-Treasurer.

TUBERCULOSIS CAMPAIGN STIMULATED BY NEW FILM

The eradication of animal tuberculosis on American farms has been made the subject for an impressive motion picture just finished by the United States department of agriculture. The story is founded on a clash between members of a community who see the economic and health benefits, and those who see only the immediate dollar and are blind to future profits and welfare. This film, called "Clean Herds and Hearts", is made up of four reels, the longest picture yet made to illustrate better farm practices. Practically all members of the cast are regular employes of the department, some of them engaged in the campaign which is used as the basis of the story.

The story hinges on the attitude of an influential dairyman who opposes the attempts of the state and federal governments, the county farm bureau and a large group of farmers and the Mothers' Club to clean up the county. The recalcitrant farmer Craig has a little girl.

See How We Grow

We can continue to give prompt service to our colleagues near New York. We are gradually arranging to give prompt service in the northern New England States, the South and Middle West. Read our list of distributors:

Dr. John Thomas, Wells River, Vt.
Drs. Austin & Huse, Springfield, Mass.
Frederick H. Osgood Co., Boston, Mass.
Dr. J. A. Pendergast, Syracuse, N. Y.
Drs. Baker & Tremlett, Gouverneur, N. Y.
Drs. Failor & Morris, Lima, Ohio.
Dr. H. K. Bailey, Wilmington, Ohio.
Haussmann & Dunn, Chicago, Ill.
Dr. H. F. Palmer, Brooklyn, Mich.
Dr. C. E. Palmer, Shelbyville, Ky.
Tennessee Serum Co., Nashville, Tenn.
Dr. S. O. Fisher, Charleston, W. Va.
Fraser Veterinary Hospital, Richmond, Va.
Dr. J. P. Spoon, Burlington, S. C.
Southeastern Laboratories, Atlanta, Ga.
Dr. Major Schofield, Miami, Fla.
Dr. J. B. Bell, Pasadena, Calif.

These reliable people represent

The Practitioner's House
The
Goshen Laboratories, Inc.
DeVine
Goshen New York

Patronize your colleagues.

Allied with the "villian" of the piece is the mayor of the county seat who, for financial and political reasons which at first seem sufficient, decides to prevent the success of the project. But the mayor has a married daughter who belongs to the Mothers' Club and is well aware of her father's weaknesses. By different methods the two objectors are changed into enthusiastic campaigners for healthy cattle and safe milk.

The new film is a sequel to "Out of the Shadows", which so far as wide distribution and tangible results are concerned, is regarded as the most successful motion picture of the two hundred that have been produced by the United States department of agriculture. Several of the leading characters in "Out of the Shadows" appear in "Clean Herds and Hearts."

The film will be circulated through the film distribution system of the United States department of Agriculture, the state agricultural colleges, and other cooperating organizations and institutions. Prints may be borrowed for specified periods, or may be bought at the laboratory charge by authorized purchasers.

Dr. H. Lent is now located at Omro, Wis.

ELABORATE NEW VETERINARY HOSPITAL FOR LOUISVILLE

A new veterinary hospital built along the lines of a famous Canadian dog kennel at Montreal has recently been completed by Dr. E. M. Lang, 4131 West Broadway, Louisville, Kentucky at a cost of $20,000.

The building is of fireproof brick and concrete construction and modern in every way. One story high it will occupy a lot 30 by 120 feet. Each stall and kennel is steam-heated and has individual sewer conections. From ten to twelve horses and from eighty to ninety dogs may be accommodated.

HISTORY OF THE B. A. I.

In connection with the fortieth anniversary of the Bureau of Animal Industry next May, a book dealing with the work of the Bureau from its beginning up to the present time is in course of publication. In response to frequent requests for authentic information conveniently arranged, Dr. U. G. Houck of the Bureau has prepared the material, aided by chiefs of the various divisions and offices.

The book gives the history of the Bureau of Animal Industry, its development, and its current activities. It contains especially com-

CORN BELT SERUM COMPANY

PROFESSIONAL CONSULTATION
LABORATORY DIAGNOSIS
AND RESEARCH

SERUMS BIOLOGICS INSTRUMENTS

A VETERINARIAN Institution
INCORPORATED 1913

PRODUCTION LABORATORIES,
215 Winstanley Avenue

LABORATORY DIAGNOSIS AND RESEARCH,
736 N. First Street

EAST ST. LOUIS, ILL., U. S. A.
U. S. Veterinary License No. 77

plete discussions of accomplishments in veterinary work. It also contains the answers to many questions constantly arising with respect to Government livestock research and field activities.

The book will contain about 300 pages and will be substantially bound in cloth. The public printing fund is not available for publishing a book of this kind, consequently it will be printed by a private concern and distributed at cost price. If only 1,000 copies are printed, the cost will be approximately $1.75 per copy. On the basis of 3,000 copies, the cost will be in the neighborhood of $1.00 per copy. It is hoped that the subscriptions will exceed 3,000.

The edition will be limited to the number of subscriptions received within the next 60 days. We desire to secure as many subscriptions as possible and would be pleased if you would bring this matter to the attention of other friends of the Bureau in your community who might desire a copy. Bills will be sent when the books are ready for delivery. All subscriptions and other communications in regard to this matter should be mailed to Dr. U. G. Houck, The Manchester, 1426 M. Street N. W., Washington, D. C. J. R. Mohler.

WESTERN NEW YORK VETERINARY MEDICAL ASSOCIATION

The Western New York Veterinary Medical Association held its tenth annual meeting on Friday, December 14th, 1923, at Buffalo, N. Y.

The following officers were elected for the year: President, Dr. Chas. D. Blaser of Buffalo, N. Y.; Vice-President, Dr. F. F. Koenig, of Jamestown, N. Y.; Secretary-Treasurer, Dr. F. F. Fehr, of Buffalo, N. Y. Two directors, Dr. E. C. Cleveland of Cattaragus and Dr. F. E. McClelland of Buffalo, N. Y. were elected for a term of three years, succeeding Drs. N. P. Hinkley of Buffalo and J. L. Wilder of Akron, N. Y., whose terms expired.

The meeting opened with clinics where cases for observation, diagnosis and operation were considered. The business meeting convened at 4:30 with thirty-five members present. Routine business was transacted and resolutions passed on the death of Dr. Horatio S. Wende late of Tonawanda, N. Y., and a charter member of the association. The committee on rates and charges submitted a report and the matter was discussed and the secretary requested to send each member a copy of said report for his consideration, these to be returned, with comments,

Rumford, Maine, December 5, 1923.
Frank S. Betz Company, Hammond, Indiana.
Received your Betzco Canine Operating Table some time ago and have used it several times. It is all that you recommend it to be and more. In fact, it is just what I have wanted for years. I would not sell it for $100.00 if I could not purchase another. (Signed) S. F. DAVIS, V.M.D.

Betzco Canine Operating Table

Originally designed for human use, and installed in thousands of physicians' offices. Converted for veterinary use by the addition of six movable clamps which allow dogs, cats, etc., to be tied upon it in any position. The sale to physicians makes large production which keeps prices low, and allows us to sell this table at a price very much lower than the $65.00 to $95.00 ordinarily asked for a canine table.

It offers a flat surface for general operating, a tilted surface for spaying and folds up so that you can take it along in a car. Sold under guarantee of satisfaction or full refund.

10VM700. Betzco Canine Operating Table $27.50

Frank S. Betz Co.,
Hammond, Ind.

Gentlemen: Enclosed find $27.50 for which send me one 10VM700 Betzco Canine Operating Table fitted with movable clamps. This order to be under the terms of your guarantee.

Name.....
Address.....
City..... State.....

to the secretary and he in turn bringing them to the committee for a final decision.

At the close of the business session dinner was served at The Palais Royal.

A literary program followed at 8 P.M., Dr. W. J. Lentz of the University of Pennsylvania, director of small animal clinics, giving an address on canine distemper or influenza, taking up the different stages and phases of the disease in a concise and able manner.

Dr. F. E. McClelland of Buffalo read a paper entitled "Some Unusual Cases We Meet in Small Animal Practice," which was highly interesting and instructive.

The ladies were very adequately entertained during the afternoon by Mrs. E. L. Volgenau, hostess for the occasion, joining the gentlemen at dinner after which a party to one of the local theaters was enjoyed.

The association will hold its next semi-annual meeting the second week in July, 1924, at Akron, N. Y., guests of Dr. J. L. Wilder.

F. F. Fehr, Secretary-Treasurer.

CATTLE-TICK FIGHT NEARS END

When the campaign for the eradication of the Texas fever tick began July 1, 1906, there were 975 counties in 15 southern states quarantined because of the presence of the cattle tick which carries the fever from animal to animal. No better proof can be had of the success of the campaign which has been carried on ever since by the United States department of agriculture and the states than the recent report, which shows that on December 31, 1923, 695 counties had been released from quarantine, leaving 280 yet to be cleaned up. During last year 73 additional counties eradicated the last tick and were released from all restrictions.

The last part of this work promises to be the most difficult, but satisfactory progress is being made and the leaders in the work believe the last tick will have been starved or poisoned within a few years.

WASHINGTON POST GRADUATE COURSE

The College of Veterinary Science, State College of Washington, gave a short post graduate course for veterinarians at Pullman, January 14th to 17th. The program was arranged by the veterinary associations of Washington, Oregon, Idaho and British Columbia in co-operation with the college and comprised an extensive schedule of papers and demonstrations dealing with horse, cattle, poultry and small

Complete Satisfaction

is what you get when you do business with us.

Hundreds of veterinarians who have been giving us their patronage for years will "bear us out" in this statement.

Our serum is of superlative quality and our service is exactly what it should be.

The Great Western Serum Company

820 Exchange Avenue
Stock Yards

CHICAGO, ILLINOIS

Telegraph Address
"Stock Yards Station"
Chicago

Long Distance Phones
Yards 0372
Yards 6400

The patronage of qualified veterinarians is respectfully solicited.

animal practice. In addition to contributions by members of the college faculty, Dr. Maurice C. Hall, Senior Zoologist B. A. I., gave a number of practical lectures on parasitology, and Dr. T. H. Ferguson, Lake Geneva, Wis., dealt with cattle practice.

HENS FOLLOW SAWMILL FOR PROFIT

Profitable use of cut-over land is one of the problems of any section in which much lumbering is done. F. M. Harrison of the Sunset Hill Farms, Lake, Miss., with the advice of the county agricultural extension agent, has tried poultry raising as a solution of the problem both for his own and for his neighbors' information. Starting in 1920 with 1 male bird and 5 hens of high-producing strains, he had by the next spring about 50 pullets. The following year his flock numbered 150 pullets and by January, 1923, it had increased to 400 pullets. For the eight months from January to September, 1923, Mr. Harrison realized from his flock a profit of $400 in addition to the value of the birds, which, by September, numbered 600. The profits were made almost entirely from the sale of eggs, according to reports to the United States Department of Agriculture, the price received averaging about 35 cents per dozen. Many people have visited the farm, some coming a distance of 75 miles, and reports show that nearly a hundred farmers who have studied the methods used on this farm are starting flocks. Mr. Harrison is increasing his flock and expects to devote additional time to his poultry plant.

FISH MEAL PROVES VALUABLE PIG FEED

That farmers would profit by using larger quantities of fish meal for hog feeding, particularly during the winter months, is the opinion of W. L. Robison, in charge of swine investigations at the Ohio Experiment Station. When carried in dry lot from 67 to 238 pounds in weight and when tankage and fish meal were valued at the same price per ton, pigs receiving corn and fish meal made cheaper and more rapid gains than those receiving corn and tankage. The cost of feed for each 100 pounds of gain for the pigs getting fish meal was $5.92, as compared with $6.23 for the tankage-fed pigs. With few exceptions fish meal has proven to be worth more for feeding purposes than an equal weight of tankage. A sum-

THE ACME OF ANTISEPTIC POTENCY AND REFINEMENT

DISTINGUISHED BECAUSE THEY ARE BETTER ANTISEPTICS

EUCAMPHOLINE:

A highly refined general antiseptic for both internal and external use. The pleasing odor, the perfect, white emulsion in dilution, and its high antiseptic potency assures its continued popularity among practitioners. It is better and in the end cheaper than the common cresylic compounds.

The price is right and the quality guaranteed: 1 Gallon, $3.50; 2 Gallons, $6.50, F. O. B. Chicago; 5 Gallons, $15.00, express prepaid.

GUAIALYPTUS:

The high medicinal value of Guaialyptus has always been recognized where an intestinal or a respiratory antiseptic is needed.

Think of it also as a standard treatment for CANINE, EQUINE and FELINE DISTEMPER, BRONCHITIS, LARYNGITIS, INFLUENZA, and STRANGLES. ROUP, CHOLERA, and OTHER FOWL SCOURGES.

In "FLU", NECROTIC ENTERITIS, and OTHER INTESTINAL AND RESPIRATORY DISORDERS OF SWINE many veterinarians use it exclusively.

The price is right; the dose is small: 1 Gallon, $5.50, F. O. B. Chicago; 2 Gallons, $10.50 express prepaid; 5 Gallons, $25.00, express prepaid.

DRS. CROWE – FISCHER

2805 Indiana Avenue Chicago, Illinois

Telephones: Victory 7510 and Victory 8900

mary of experiments at different stations shows a saving of 63 cents in the cost of feed for each 100 pounds of gain in favor of fish meal.

Fish meal also compared favorably with skimmed milk for feeding in connection with corn. If middlings, linseed meal, or soybeans are fed with corn, or corn and other grains, the benefit from feeding fish meal will be even greater than when it is substituted for dairy by-products or tankage.

Under winter conditions fish meal is worth relatively more in comparison with tankage than when the pigs are on pasture. Likewise it has a relatively higher feeding value for young pigs than for well grown shoats.

CENTRAL MICHIGAN MEETING

Dr. W. N. Armstrong, secretary-treasurer of the Central Michigan Veterinary Medical Society, reports that the organization held a very successful meeting at Jackson, Mich., December 12th. The program covered a wide variety of topics contributed by prominent veterinarians of the state, including Dr. H. H. Sparhawk, Dr. Ward Giltner, Dr. C. C. Mix, Dr. A. B. Curtis, Dr. J. H. Stafseth, Dr. E. T. Hallman, Dr. R. A. Runnells, Dr. B. F. Kilham. Dr. H. Preston Hoskins, secretary A. V.

We Prepay Freight

We prepay freight on orders of $25.00 and over in the states of

Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma

In all other states we allow 5% of the total amount of orders at $25.00 and over.

Liquor Cresolis Comp., U. S. P.

	Gal.
50 gal. drums	$1.48
30 gal. drums	1.57
10 gal. cans	1.80
5 gal. cans	1.84

Circle A Dip

	Gal.
50 gal. drums	$0.78
10 gal. cans	.92
5 gal. cans	.96

All Containers Inclusive

Less 3% for cash with order

Ask for price list

Satisfaction or Money Back

United Chemical Companies

Kansas City, Missouri

Antiphlogistine

Is a Valuable Aid to Veterinarians in

EQUINE BOVINE CANINE FELINE PRACTICE

MASTITIS
PNEUMONIA
TENDINITIS
SPRAINS
SCRATCHES
ORCHITIS
CAPPED KNEE
INFLATED GLANDS
ABSCESSES
BRUISES
BURNS
BOG SPAVIN
HARNESS GALLS

Yield Promptly to

ANTIPHLOGISTINE

Applied Hot and Thick and Covered With Cotton

Send for Booklet and Sample

The Denver Chemical Mfg. Co.
New York

M. A., extended greetings from the national association and gave a pertinent discussion of present problems The total attendance was thirty-five, including many veterinarians from outside of the county and one from outside of the state, Dr. J. H. Lacefesty, Lyon, Ohio.

Dr. I. E. Scripture, Frankfort, Ind., after 32 years hard work, felt compelled to retire about two years ago. After a rest, however, the doctor announces his intention of coming back. He has remodeled his old hospital to take care of canine and feline patients. However, he intends to do a general practice.

Dr. J. I. Gibson, Live Stock Commissioner, South St. Joseph Live Stock Exchange, had a very interesting article in *The Stock Yards Daily Journal* (St. Joseph) January 1st, describing the progress made in live stock sanitary work in that section during 1923. He stated that great interest in the work was shown by animal owners and marked success had attended the plans for disease eradication and prevention.

Dr. J. T. McGilvray, chairman of the program committee of the South Dakota Veterinary Medical Association, announced that the meeting of the organization would be held at Sioux Falls, January 31st and February 1st. This notice arrived too late to appear in the January issue. A good program had been prepared, and Dr. McGilvray was looking forward to a very successful session.

Dr. and Mrs. J. L. Ruble, Quitman, Ga., announced a new arrival at their home in the person of Betty Yvonne, born December 17th, weight 8½ pounds.

Dr. J. C. Luckeroth, Seneca, Kansas, is mourning the death of his mother, Mrs. Theresa Wempe Luckeroth, who died December 2nd,

"Making Animal Tagging Easy"

KETCHUM CLINCHER

The new self-piercing and self-clinching bright STEEL tag for Cattle, Sheep and Hogs—that stays in. Three sizes. Numbered and Lettered to suit. Write for descriptions and prices.
KETCHUM MFG. CO., Dept. A, Luzerne, N. Y.

Dr. J. H. Copenhaver, Pres. Dr. J. S. Koen, Sec'y.

LIBERTY LABORATORIES

RALSTON, NEBRASKA

LIBERTY SERUMS

Liberty Red—Liberty Clear—Liberty Concentrated

LIBERTY VIRUS

Quality Products—Dependable Service
Satisfactory Results Certain

Liberty Laboratories

Branch Offices

Lincoln, Neb.
St. Joseph, Mo.
Des Moines, Ia.
Bloomington, Ill.
Bushnell, Ill.
Davenport, Ia.

after having been in ill health for about a year. She leaves ten children, eight brothers, one sister, and six grandchildren. Among her brothers is Dr. A. F. Wempe, a veterinary practitioner at Marysville, Kansas.

Dr. J. A. Winkler, secretary-treasurer of the Kentucky Veterinary Medical Association, states that the winter meeting of the association will be held at Hopkinsville, Ky., February 6th and 7th, with headquarters at the Hotel Latham. All graduate veterinarians are invited to attend.

DEATH OF DR. L. G. HART, SR.

Notice of Dr. Hart's death has not appeared in these columns owing to the fact that no information was sent in until late in December, when Dr. T. Wrigglesworth of Eau Claire, Wis., wrote, enclosing a clipping from a local paper. Dr. Hart died September 12th from the effect of burns received when his auto caught fire three weeks before. Dr. Hart was born at Columbus, Wis., July 29, 1869, and was educated in the Eau Claire public schools. He spent two years of study in England and then entered the Toronto Veterinary College, from which he graduated in 1892. He practiced in partnership with Dr. T. Wrigglesworth at Eau Claire and later opened an office in Chippewa Falls. For a year prior to his death he had been in practice at Bloomer, Wis. He is survived by his father, four sisters, three brothers, and four children, among whom is Dr. L. G. Hart, Jr., a veterinary practitioner at Menomonie, Wis.

Dr. and Mrs. R. W. Williams announced the arrival of a daughter at their home, January 2nd. The newcomer has been named Marion Anna Williams and weighed in at 8¼ pounds.

Dr. C. H. Hart recently located for practice at Wasco, Cal. He was formerly employed by the Kern County Land Company.

Dr. W. H. Boynton of the Philippine Bureau of Agriculture has been appointed professor of veterinary science at the University of California. He is reported to have been experimenting with a vaccine against hog cholera and will demonstrate the results to be obtained from it on his arrival in California. His appointment is effective July 1st, but he is expected to arrive at the university at an earlier date to start research work.

THE FOSTORIA SERUM CO.

FOSTORIA, OHIO, U. S. A.

Manufacturers of

Anti-Hog Cholera Serum

Hog Cholera Virus

Under U. S. Veterinary License No. 131

Dr. R. B. Griffinghagen recently completed the erection of a veterinary hospital at Grants Pass, Oregon, where he located for practice a short time ago.

Dr. G. A. Dallimore died at his home in St. Paul, Minn., December 19th, at the age of 77 years. He formerly served for some time as a member of the state legislature.

Dr. N. M. Barnes died from apoplexy at his home in Athens, Texas, December 21st. He was a well known veterinary practitioner in that community, having practiced in Athens since 1911. He was 42 years of age and is survived by his wife and four children.

Dr. H. M. Renner, a practitioner of Wellsville, Mo., died December 16th following an operation for appendicitis. He was 40 years old and is survived by his wife.

Dr. A. G. Alverson of Bloomington, Ill., recently met with a serious accident. While putting alcohol in his car another car backed into him, breaking his leg above the knee (compound fracture). Dr. Alverson is now in a hospital at Bloomington.

Dr. J. F. Callison, formerly at Ramsey, Ill., has purchased the practice of Dr. W. L. Wooters of Moweaqua, Ill., and has already started practicing in his new location.

Word has just reached us of the sudden death of Dr. Albert Buck of Urbana, Ohio, on November 29, 1923.

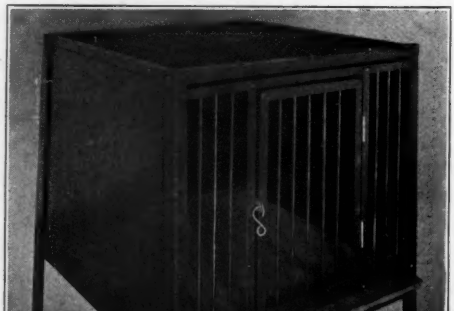
Dr. Frank Stout of Paloma, Ill., was accidentally shot in the right arm some time ago. We are glad to report that the wound is healing nicely.

Dr. A. J. Tupa, executive secretary of the Minnesota veterinary examining board since 1907, resigned his position January 9th. The reason for this action was given by Dr. Tupa as the necessity for him to devote all his attention to other business.

Dr. S. W. Haigler has discontinued practice at Belleflower, Ill., where he was located for five years, and has joined Dr. J. C. Flynn of Kansas City, where he will specialize in small animal practice. Dr. Haigler wishes to tell his friends that his new address will be 2036 Main St., Kansas City, Mo.

SIMPLICITY SANITARY KENNELS

AFFORD THE VETERINARIAN A MEANS OF EQUIPPING HIS ESTABLISHMENT FOR THE PROPER HOSPITALIZATION OF SMALL ANIMALS AT MINIMUM COST



Canine Tables
Horse Slings
Casting Harness
Horse Operating Tables
Hopples

All Fully Guaranteed

Write for Prices or see your Dealer

VETERINARY SPECIALTY COMPANY
4548 Ravenswood Ave., Chicago, Illinois
J. T. Hernsheim, D. V. M., President

Dr. C. M. Morgan of Manchester, Iowa, recently sold his practice to Dr. E. A. Brockmeier. Dr. Morgan has moved to Indianola, Iowa, and will be employed in state and government work.

The continuance of tuberculin tests of cattle in New York state has recently been authorized according to press reports. Tests were discontinued last November when the appropriation of $2,300,000 by the 1923 legislature was exhausted. The present authorization to resume the tests provides that a stipulation must be signed by the owner of cattle tested "in which he agrees to delay the collection of any claims for indemnity until such time as the legislature makes further appropriation for that purpose." An appropriation of $1,500,000 will be asked of the legislature.

Forty-four Illinois counties have veterinarians employed for area testing of tuberculosis in cattle or have county appropriations for their hire, according to M. H. Peterson, in charge of tuberculosis eradication work for the Illinois Agricultural Association.

An anthrax outbreak among livestock in the vicinity of Henrietta, Mo., was reported early in December. Dr. S. S. Morgan, deputy state veterinarian, later gave out the statement that the situation was well under control and conditions were much improved. Many farmers were led to take out insurance on their animals.

Sections of Northern Nebraska experienced an outbreak of hog cholera late in December. It was believed that the spread of the disease was due to the large number of crows in that section, and steps were taken to exterminate them.

"Waukeen," or mildewed raisins, a grade lower than the distillery raisin, are fed to hogs in California. Last year, owing to the unusual weather, there was an abundant supply of these spoiled raisins. An item in the *Kansas City Times* states "Between rotten raisins and garbage fed hogs at San Francisco and Los Angeles, the California pork supply has a fertilizer origin."

"Flu" among hogs was said to be prevalent in Hamilton county, Illinois, in December, the swine owners in several localities reporting losses.

PURITY
Purity
BIOLOGICAL
First
LABORATORIES

TRADE MARK
REG. U. S. PAT. OFF.

WHY WORRY

about the

PROBABILITY OF HAVING TO RE-VACCINATE?

Use a Serum That Is Worthy of Your Confidence

The "Old Reliable" Purity Anti-Hog Cholera Serum Always "Immunizes"

Made by Experienced Veterinarians

PURITY BIOLOGICAL LABORATORIES
Sioux City, Iowa

Think THIS Over

More **"Word of Mouth"** advertising is given **Grain Belt Serum** than in any other way. **Why?** It takes **Quality** to make a veterinarian satisfied, but it requires **extraordinary merit** to make him really enthusiastic.

Sales Limited to the Graduate.

Grain Belt Supply Company

Home Office and Laboratory
4901 S. 33rd St. Omaha, Neb.

Branch Offices
Mason City, Iowa Sioux City, Iowa

Dr. L. J. Allen, federal supervisor of tuberculosis eradication work in the state of Oklahoma, recently estimated that there are at least 12,000 tuberculous cattle in the state. He cited one herd near Tulsa where among fifty animals tested twenty-seven were found diseased.

A veterinarian in South Dakota is quoted by a local paper as stating that he must have prompt payment for calls, adding "If it took a doctor as long to make a call as it does some people to pay him, there would be a howl go up that could be heard around the world without a radio or loud-speaker."

Glanders was reported among livestock in the vicinity of Bay City, Texas, the latter part of December, and representatives of the state veterinarian's office were investigating the outbreak.

Death of cattle from moldy corn is reported by veterinarians at Norfolk and Madison, Nebraska, some serious losses having occurred in December.

Dr. Alex McRae, formerly located at Craik, Saskatchewan, has recently returned to the states, and has located for practice at Zalma, Mo.

The annual meeting of the Vermont Veterinary Medical Association will be held at the Hotel Sherwood, Burlington, Vermont, on February 13 and 14, 1924. An interesting and instructive program has been promised by the secretary, Dr. Geo. Thomas of Wells River, Vermont.

CASTRATING AND DOCKING INCREASE PRICE OF LAMBS

Producing desirable lambs for the market is dependable to a large extent on the three following principles of management, namely, good breeding, proper feeding, and castration and docking of the lambs. Of these three factors, the latter is probably more abused than any of the others, especially when it is considered that docking and castrating are easily done and add much to the desirability and value of the lamb carcass. The most desirable, and thus the most profitable, lamb carcass can not be produced from lambs which have not been docked and castrated, says the United States Department of Agriculture.

The farmer does not market his bull calves as bulls, nor his boar pigs as boars, says the

department. Why, therefore, should he market his male lambs as ram lambs rather than as wethers? The correction of this neglect by castrating and docking the lambs is vital, and upon a more general observance of the practice in the farm flocks hinge the real profits and more general success. It is conservatively estimated that 80% of the native lambs—those marketed from farm flocks—which reach the markets come undocked and uncastrated, and that the percentage of ram lambs among the offering during the last year has been as large as ever before.

On the other hand, the custom of docking all lambs and castrating the males is almost universal in the range flocks, and to this practice in a large measure may be attributed the fact that lambs produced on our western ranges outsell native or farm-raised lambs at the market on the average of from $1 to $1.50 per 100 pounds. These operations have been found profitable, and that is the big reason that they have become so commonly practiced on the western range. They are likewise applicable to the farm flock and just as necessary for the production of the best lambs and consequently the most profit.

MEDICATION OF ANIMALS BY LAYMEN

Realizing that your journal is for the purpose of placing facts before the practitioner which will be of benefit to the profession in general, I wish to offer a suggestion which will, I believe, be of benefit and that is: To never leave an original carton which has contained any certain drug or specific remedy on the premises of a client, for the next time he has a case of, say diarrhea in a cow, and prior to this has had the same trouble and called a veterinarian who came with a box of Pheno-Sulphates partly filled, he gave these to the animal, left the box well labeled from the pharmaceutical house and went home. The drug relieved the trouble. In a few more days this same client has a calf with scours, and as I recently saw in my practice, he goes to the drug store in search of some of the identical medicine, taking the carton left by the veterinarian in order to get the correct drug.

As it happened, in this case, the druggist is out of them at present but will have some in a few days. Mr. Client then resorts to me in quest of some Pheno-Sulphate tablets (he being well acquainted with the name of the tablet by this time) and at the same time takes the well labeled carton from the drug house out of his pocket, saying, "Dr. ——— gave some of these to a cow of mine which had diarrhea last spring and it sure worked fine. I have a calf up home now with the scours and want to give him some Pheno-Sulphates."

This is just one of many examples which I see regularly in my practice where certain practitioners unconscious of the after effects, discard well labeled cartons of different descriptions on the premises of a client, thereby teaching the client what is given in a certain case, where it may be purchased, etc.

The result is some veterinarian who has spent considerable time and money in learning his profession is going to lose a call at that same man's place every time that man can treat the condition successfully himself. Some of these same practitioners who have left some

Gillette Electric Clipper

Clips Horses, Mules, Cattle and Dogs
Shears Sheep and Goats
Grooms Horses and Cows
Special Dog Cutter Guaranteed to Clip Hair of Any Dog

Send for Literature

Gillette Clipping Machine Co.
129-131 West 31st St., Dept. V.
NEW YORK CITY

LET US TAN YOUR HIDE.

Horse or Cow hide, Calf or other skins **with hair or fur on,** and make them into coats (for men and women), robes, rugs or gloves when so ordered; or we can make your hides into Oak Tanned **Harness or Slaughter Sole or Belt Leather; your calfskins into Shoe Leather.** Colors, Gun Metal, Mahogany, Russet or lighter shade. Calfskins tanned in the lighter shades of shoe leather, also make **elegant stand and table covers;** great for birthday, wedding and holiday gifts.

LET US FIX YOUR WORN FURS

freshen, repair and reshape them if needed. Furs are very light weight, therefore it will **cost but little** to send them in to us by Parcel Post and get **our estimate of cost;** then we will hold them aside awaiting your decision. If you say **"go ahead,"** very well; we will do so and hold them free of storage until you want them. If you say **"no,"** we will return them post-paid.

Our illustrated catalog and style book combined gives a lot of useful information. It tells how to take off and care for hides. About **our safe dyeing process** on cow and horse hides, calf and fur skins. About dressing fine fur skins and making them into neckpieces, muffs and garments. About taxidermy and Head Mounting.

The Crosby Frisian Fur Company,
571 Lyell Ave., Rochester, N. Y.

THE ORIGINAL IS——

ALWAYS THE BEST

FLAVISOL

Increased Sales and Increased Production

BRING YOU LOWER PRICES

One Gallon.....$5.00
Half Gallon..... 3.00
One Pint..... 1.25

One Pkg. 30 cc. vials (Intravenous concentrated).....$2.00

FLAVISOL always gives the usual beneficial results as a universal antiseptic. Even when diluted it is stronger than substitutes. Safeguard yourself by using the original FLAVISOL in original packages.

Zell Straub Laboratories

(Originators and Sole Producers of FLAVISOL)

BIOLOGICS PHARMACEUTICALS SPECIALTIES

5514-5520 Norwood Park Ave., CHICAGO, U. S. A.

of this information in the form of printed matter on drug cartons at the farmer's barn may be the ones who later are finding fault because business is poor.

This may appear to be a trivial matter, but just stop and think it over for awhile and I believe you'll agree with me that it is something worth giving attention.

Take an extra stoop when out on a case, pick up your empty packages and be sure not to forget your grip. If you have to leave, either, leave the grip because there's not generally any printed information on that.

Gurnee, Ill. L. J. McClure.

PECULIARITIES OF AZOTURIA

When atrophy of the muscles follows an attack of azoturia, it is of very uncertain duration. Forced exercise just as soon as the animal is able to walk will often prevent it. I believe the atrophy to be due to nerve trunk paralysis; recovery is rapid when it begins. I believe recovery will take place in every case. I have not seen it occur earlier than three months, nor later than eighteen months.—Dr. L. A. Merillat, Chicago, Ill.

In a practice of more than thirty years, I have seen only one case of azoturia in a pregnant mare.—Dr. J. W. Martin, Kankakee, Ill.

In more than thirty years' practice, much of it in breeding districts, I have never seen a case of azoturia in a pregnant mare nor in a breeding stallion.—Dr. W. L. Williams, Ithaca, N. Y.

I have seen no loss from azoturia in Canada where the animals were fed oats. In Iowa, where most horses are fed highly on corn, the loss from azoturia is very great.—Dr. J. W Griffith, Cedar Rapids, Iowa.

My azoturia cases occurring in the city show a very high percentage of mortality, but my cases occurring in the lumber camps up in the mountains nearly all recover, even without treatment. I believe that quiet at the beginning of the attack is a very essential factor in the recovery of the animal. The worst possible conditions under which azoturia can be treated are those to be found on the street where a crowd of curious people are gathered and from where the animal must later be conveyed to a hospital in an ambulance. Such a beginning in an attack of azoturia very much

CLASSIFIED ADVERTISEMENTS

For Sale, Wanted, etc., $2.00 for 25 words or less; additional words, 8 cents. 25 cents extra when replies are sent care of the journal.

FOR SALE—WANTED

FER-SUL AND FER-SUL-INE—make a good side line for salesman visiting veterinarians. Address, The Westmoreland Chemical & Color Company, 22nd & Westmoreland Streets, Philadelphia.

I HAVE A FEW PAIR OF REGISTERED SILver black foxes for sale. This is the center of the black fox industry of the United States. Dr. F. U. Steele, Muskegon, Mich.

"QUICK COLLECTIONS" — Everywhere. Live wire firm! Established 30 years. William H. Dodd, 87 Nassau St., New York. Don't wait, send us your bills today!

BETTER PRINTING for less money. Send for free samples of letterheads, envelopes, circulars, booklets, cards, etc. They will save you money. Fantus Co., 529 So. Dearborn St., Chicago.

POSITION WANTED—Graduate Iowa State College. Specially trained in pathology, bacteriology, etc. Post graduate course, Ohio State College. Nine years general veterinary practice. Experienced in biological manufacturing; three years' experience as hospital pathologist. Two years special post graduate course. Consider any kind position anywhere. Address 3521 care F. V. Kniest, Peters Trust Bldg., Omaha, Nebr.

FOR SALE—Nebraska practice, doing $8,000 a year; large territory. No competition or county agent. Moving to Wyoming, reason for selling. Address 774, VETERINARY MEDICINE, 4753 Grand Blvd., Chicago, Illinois.

A BARGAIN—Complete sterility outfit of the late Dr. Joseph Hughes, in full leather case. Price $55.00. Originally cost about four times this amount. Also large stock of veterinary medicines consisting of liniments, scour cure, blisters, stock food, etc. Will sell at 15 cents on the dollar of original price. Address 775, c/o VETERINARY MEDICINE, 4753 Grand Blvd., Chicago, Ill.

WANTED—Back numbers of VETERINARY MEDICINE, for January, February, November and December, 1923. Subscriptions will be extended one month for each issue received. Address VETERINARY MEDICINE, 4753 Grand Blvd., Chicago, Ill.

FOR SALE—Indiana veterinary practice. Good general practice. Lots of stock; no competition. Appointment also transferable. Good territory. Have made money here. Fine town. Take part cash. Address 3556 care F. V. Kniest, Peters Trust Bldg., Omaha, Nebr.

POSITION WANTED—Graduate University Pennsylvania, Veterinary Department. Age 29. Consider any state. About five years U. S. veterinary inspector. Experienced in general practice—cholera eradication, glanders, anthrax, blackleg, tuberculosis, stock yards inspection, etc. Unusual experience in abortions of cattle. Experienced in breeding, feeding, grazing, etc. Not afraid to work. Address 3558 care F. V. Kniest, Peters Trust Bldg., Omaha, Nebr.

EARN MORE MONEY

Add $15.00 to $35.00 a week to your income by taking orders in your spare moments for our big line of Stock Dip & Disinfectant, Fly Spray, Hog Mineral Compound and Antiseptics. Sales are easy, as stockraisers prefer to buy from veterinarians, and your profits are unusually liberal. Write quick for exclusive territory offer, low wholesale prices and money back guarantee. It means more money for you.

VAN CHEMICAL COMPANY
College Hill Station, Cincinnati, Ohio.

"BOOKS YOU SHOULD HAVE"

(Only publications of special interest to the veterinarian are advertised in this column.)

THE DIAGNOSIS AND TREATMENT OF INTERNAL PARASITES
By Maurice C. Hall
Second Revised Edition.
The Best Seller of the Year. A book every practitioner and laboratory worker will eventually buy. Bound in Cloth. Profusely Illustrated.
Price $1.50
L. A. Merillat, Publisher
1827 South Wabash Avenue, Chicago.

Pammel's

Manual for Poisonous Plants

$7.50 plus Postage and Insurance.

Address orders to

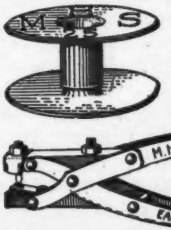
PROFESSOR L. H. PAMMEL

Iowa State College, Ames, Iowa

Free Book "Farm and Home Therapy with Iodine"

Tells how to use this powerful antiseptic remedy in a hundred different ways in household and on farm. Beneficial for man and beast. Write for copy.

Chilean Iodine Producers
25 Madison Avenue New York



STOLL STAY-THERE EAR MARK

The identification tag for animals that IS satisfactory. Used by the B. A. I., most states, and hundreds of veterinary practitioners. Write for sample and price. An ear mark for every purpose. M. H. STOLL, 3012 Webster St., Omaha, Nebr.

POULTRY DISEASES

C. T. Poultry Antiseptic No. 1

Zinc Sulpho. Carbolate...15 grs.
Sodium Sulphate..... 7 "
Corrosive Sublimate ..... 6 "
Citric Acid ..... 3 "

Indicated in Cholera, and all Diarrhoeal conditions in Poultry, $1.00 per $100.

C. T. Alkaseptine

Sodium Bicarbonate .....48 grs.
combined with
Sodium Salicylate
Sodium Borate
Sodium Benzoate
Eucalyptol
Thymol

Indicated in Catarrhal conditions in Poultry—Bronchial and Intestinal. Also in sore mouths, cankers, roup, etc. $.95 per 100.

For the convenience of our customers we put up C. T. Poultry Antiseptic No. 1 and C. T. Alkaseptine in 4 oz. Utility Boxes. Each box holding 20 tablets, with printed directions under the veterinarian's own label (in orders of not less than ½ gross), which makes a convenient dispensing package.

$35.00 Gross - $18.00 per ½ Gross.

R. J. STRASENBURGH CO.

Manufacturing Chemists
Rochester, N. Y.

predisposes to a fatal ending.—Dr. W. G. Hollingsworth, Utica, N. Y.

Azoturia has often appeared to me as a sort of enzootic disease. I have known of certain localities in which azoturia would exist for months, cases occurring frequently, and perhaps in another part of the same county not a single case would occur during the entire time. In fact, this peculiar distribution of azoturia seemed to nearly always obtain in the section of Iowa where I formerly practiced.—Dr. Hal C. Simpson, Pomona, Cal.

I have never seen a case of azoturia in a horse that had been in continuous idleness for more than ten days, nor in horses spasmodically exercised as fire-horses and army horses. I believe there is something about a long period of idleness that confers immunity to attacks of azoturia.—Dr. W. L. Williams, Ithaca, N. Y.

I believe attacks of azoturia occurring in animals after a long period of idleness are rare. I have seen only one such case and that occurred in an animal that had been in the sling for forty-two days. She was being driven home from the hospital when she came down with an attack of azoturia and died.—Dr. L. Van Es, Lincoln, Nebr.

STALLION REGISTRATION

Stallion registration providing for the use of sound and preferably pure-bred sires for breeding purposes should be given careful consideration not only by the horse breeder, but also the veterinarian. Stallion registration laws that were more or less effective in preventing the breeding of unsound and scrub sires were enacted in several states prior to 1918. There was less horse breeding during the war, due to the demands upon the farmer to produce more wheat, corn, cotton, pork, beef and mutton, and there has been no incentive to breed horses since the close of the war. It is probable that the low ebb of horse breeding occurred in 1921, when there was only 40% as many mares bred as there were in 1910—at least in some sections. There was about 25% more mares bred in 1923 than there was in 1922. The limited horse breeding has materially reduced the number of available stallions, and although there will probably not be an immediate shortage of horses, the demand for good horses is certain to increase and there

should be a constant vigilance to prevent the use of undesirable breeding stock and, particularly, sires.

There is a scarcity of good draft stallions, and for the good of the horse industry in the future breeding should be held in abeyance until good sires are available.

Those stallion registration laws that were enacted some years ago and have probably been more or less dormant for the last five or six years should be revived and enforced. Veterinarians should advise the horse breeder on the value of sound pure-bred sires.

A. T. K.

SWIMMING HORSES

Upon the march many opportunities are afforded for swimming animals, and it may be necessary at times in crossing streams and rivers. For this reason a thorough knowledge of its practical application should be understood. The horse is a powerful natural swimmer and is capable of bearing a fully equipped man for a considerable distance. In swimming, only the horse's head remains visible, and the depth to which the body sinks depends upon the weight carried. The usual way is to strip both horses and men and ferry the equipment across. The curb should be removed and the reins of the snaffle knotted to prevent entangling with the forelegs when swimming. The men ride into the water until the horses are out of standing depth, then slip off on downstream side, holding on the mane or tail, preferably the former, because it provides a better position for the man to guide the animal. This is accomplished by the use of the free hand to splash water against the horse's head on the side opposite the direction desired. Animals should be headed upstream at an angle depending on the swiftness of the current. Horses may be towed after boats by placing a non-slip loop around the neck and gently pulling them into the water. Once in, they will follow the boat without difficulty Traction should never be exerted on the rope when the animal is swimming, on account of the danger of pulling the nostrils beneath the water and drowing him. The rope should be long and the boat rowed slowly. In this way three or four animals may be taken across at one time.

When crossings are narrow, free from dangers, and with good landings, the animals can with safety be driven across by themselves Care must be taken that head lines and reins

FISTONE

"An Internal Treatment for Fistula of the Withers, Poll-Evil, Quittor, Nasal Gleet and Chronic Suppurations"

FISTONE is only a name. The combination of minerals it represents is more than a name. It has proved to have remarkable curative properties in fistula of the withers, poll-evil and other chronic suppurative conditions, where despite surgical treatment the discharge continues month after month.

Our Slogan—"When everything else fails, try FISTONE"

TRY IT! IT WORKS!

In offering this treatment we wish to state that FISTONE will cure in any of the stages of the above diseases if fed as directed.

IT WORKS! TRY IT!

Price, ½ Doz., $5.00; 1 Doz., $10.00, postpaid

To introduce FISTONE, "An internal treatment for Fistula, Poll-Evil, Quittor, Nasal Catarrh and Chronic Suppuration," we will send you One Dozen 12-oz. boxes of FISTONE (Which is GUARANTEED to CURE ONE case of Fistula or Poll-Evil) on receipt of your professional card and $8.00. Try it out on your most difficult case of Fistula, Poll-Evil or Quittor. Note its positive results.

SIGN AND MAIL THIS COUPON

Enclose professional card or stationery. Only One Dozen Boxes of FISTONE for $8.00 to a veterinarian—money returned to anyone ordering twice.
It is mutually understood that all we require is for the full prescription of Twelve 12-oz boxes of FISTONE be fed according to directions.

FISTONE AND APPLIANCE CO., COLLEGE CORNER, OHIO.
Enclosed find check for $8.00 for which send me ONE DOZEN 12-oz. Boxes of FISTONE, "An internal treatment for FISTULA, POLL-EVIL and QUITTOR," and so forth.

Dr. .....

Address .....

Send for illustrated literature of Dr. C. A. Clark's Automatic Sanitary Operating Table for Vaccinating Swine.

FOR
NINE YEARS

"We have produced anti-hog cholera serum and virus and nothing more; and we believe we have done that well. Our patrons think so too."

GUILFOIL SERUM COMPANY
Offices and Laboratory
18-20-22 North Second Street
KANSAS CITY KANSAS

are securely knotted around the neck so that they may be easily reached on the other side. It is of advantage to have a boat downstream to keep the animals in the proper direction, and some of the first over held at the landing place within sight of those following.

Swimming horses is excellent exercise, and if instituted as a part of their training, will make them fearless of water, and when required through military necessity, it will be a simple undertaking.

C. E. Jewel,
Lieut. Col., V. C. (Retired).

THE BABCOCK TEST

How long has the Babcock butterfat test been in use, and who was Babcock the discoverer, to what is its popularity due?—Maine.

Reply: The Babcock test was invented in 1890 by Professor S. M. Babcock of the University of Wisconsin who is still living. The popularity is due to the simplicity of the method as compared with other methods. It enables anyone of ordinary intelligence to determine the fat content of a given sample of milk in a few moments, and the test is accurate.

POST VACCINATION LOSSES OF HOGS

Recently I was called to vaccinate a herd of shoats, weighing 40 to 50 pounds, which were running in a blue grass pasture, following a herd of cattle. The animals showed no physical symptoms of disease, excepting several had high temperatures, 106° F. They were all given 30 c.c. of serum and 2 c.c. of virus. They were then turned back in the same pasture and seemed to be doing well.

Five weeks later they were placed in a cornfield, having access to flowing water. They had been in this field only a few days when they began to die. I held postmortem examinations on three, and they all showed the same lesions throughout and thoroughly infested lesions—marked evidence of pneumonia, cholera with intestinal parasites.

My advice was to remove all healthy animals from the cornfield. This was done and they were taken back to the blue grass pasture, where they seemed to do well for about five days, when they began to die, showing the same lesions as before. The healthy ones were then sorted out and sent to market.

What was the cause of the high temperature at time of vaccination, and why did the animals show cholera six weeks after vaccination?

Why was it that they did not come down with something soon after vaccination?

I have used the same brand of serum and virus on several other herds with no bad results. I vaccinated a herd on the neighboring farm the next day with the same kind of serum and virus, and the hogs are doing fine. They have access to the same stream of water downstream as the ones in the cornfield that took sick.

The more I practice the less I know.
—O. C. S., Indiana.

Comment by Dr. A. T. Kinsley: It is my judgment that when the vaccinated pigs were turned into the cornfield, dietary disturbance was established, which in conjunction with the extensive infestation of ascarids resulted in the pneumonia and other lesions noted on autopsy. It is very probable that there was more or less hemorrhagic septicemia, as it is noted that when these pigs were returned to pasture they seemed to recuperate for a period of five days, after which time they began to develop symptoms as they did while in the cornfield. It is very probable that the high temperature at the time of vaccination was due to filtrable virus; otherwise, the administration of serum and virus would not have checked the disturbance.

The reason there were no losses while the pigs were running in blue grass was due to the fact that their diet was conducive to good health. When they were turned into the cornfield, the disturbance induced by gorging with the green corn and the sudden change of diet diminished their resistance and thus permitted the development of hemorrhagic septicemia.

In other words, the serum and virus were not at fault, but the care of the swine after vaccination. Of course, there is always a possibility of an avirulent virus or impotent serum, but these factors were practically eliminated by the fact that other herds were vaccinated with the same kind of material with good results.

Professor E. L. Furlong, curator of the vertebrate collection at the University of California predicts in an interview that the horse will be extinct in 100 years, and is preparing to inform future generations with physical evidence of his prophetic wisdom by mounting (before it is too late) skeletons of existing types.

Dr. R. C. Sollberger of St. Louis, Mo., died a short time ago.

RALSTON SERUM COMPANY — SUPREME SERUM

Read all the other serum ads, combine *all their virtues* and you have

Ralston Serum

Ralston Blood Serum

Ralston Clear Dilute Serum

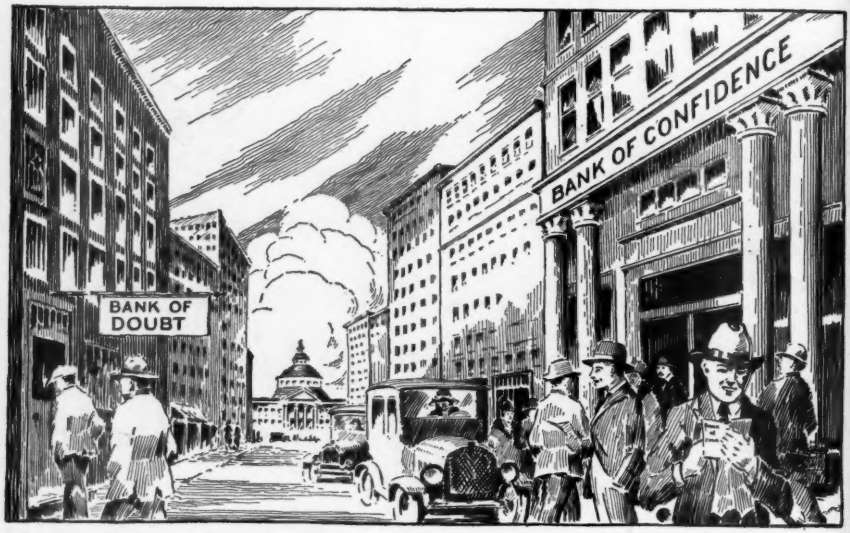
Ralston Concentrated Serum

Made by Veterinarians
Sold by Veterinarians
Only to Veterinarians

Service
Which Really Serves

Ralston Serum Co.

in the country out of Omaha
Ralston, Neb.



The Greatest Asset That an Industry Can Have Is the Confidence and Good Will of the People

For 10 years we have produced good Anti-Hog Cholera Serum and Virus.

For 10 years our products have held the confidence of the Veterinary Profession and leading breeders of hogs.

For 10 years we have quoted and sold only to Graduate Veterinarians.

For 10 years we have maintained one policy, to always produce the best regardless of cost.

Our growth has been steady—but more like the oak than the mushroom.

We Appreciate Your Business

The Simonson Serum Farm

Hooper, Nebraska